Environmental Studies No. 23

Marine Mammals of the Lancaster Sound Region

Northern Affairs Program

Michèle McLaughlin
under the auspices of the
Arctic Biological Station
Department of Fisheries and Oceans
Ste. Anne de Bellevue
Quebec

Published under the authority of the
Hon. John C. Munro, P.C., M.P.,
Minister of Indian Affairs and
Northern Development,
Ottawa, 1982.

QS—8311-000-EE-A1

Catalogue No. R71-19/23-1982E

ISBN 0-662-12237-2

The view, conclusions and
recommendations expressed herein
are those of the authors and not
necessarily those of the Department.

Cette publication peut aussi être
obtenue en français.

TABLE OF CONTENTS

PAGE

ACKNOWLEDGEMENTS i
MAP OF STUDY AREA ii
INTRODUCTION 1
METHODS AND AIMS 1
MAP LEGEND 5
MAP DESCRIPTIONS 6
Steensby Inlet 37F 7
Icebound Lake 37G 8
Nova Zembla Island 38A 9
Pond Inlet 38B 12
Bylot Island 38C 15
Erichsen Lake 47E 17
Agu Bay 47F 18
Berlinguet Inlet 47G 20
Phillips Creek 47H 21
Milne Inlet 48A 22
Moffet Inlet 48B 24
Arctic Bay 48C 26
Navy Board Inlet 48D 29
Dundas Harbour 48E 32
Powell Inlet 48F 36
Easter Cape 57E 38
Thom Bay 57F 40
Brentford Bay 57G 41
Bourassa Bay 57H 43
Fitzgerald Bay 58A 44
Creswell Bay 58B 46
Somerset Bay 58C 49
Cape Clarence 58D 51
Maxwell Bay 58E 53
Resolute 58F 56
BIBLIOGRAPHY 59
OTHER REFERENCES 72
APPENDIX 73
MARINE MAMMAL MAP, LANCASTER SOUND STUDY AREA,
in sleeve, inside back cover

PREFACE

The Northern Land Use Information Series (NLUIS) is an on-going environmental research and information mapping program for northern Canada, which provides a convenient reconnaissance-level information base to facilitate regional planning and the application of the Territorial Land Use Regulations. This map series is jointly funded by the Department of Indian and Northern Affairs, and the Department of the Environment. Since 1971, 273 maps covering 2.4 million km^2 have been published for the Yukon Territory, most of the mainland Northwest Territories, and the north Baffin Island area. Information presented in map and text form includes a wide range of environmental-social topics such as wildlife information, fish resources, an ecological land classification, native land use data, historical sites, proposed resource development activities, areas of conservation interest, and other information to assist in land use planning and management.

The program relies on the co-operation and assistance of several federal and territorial government departments, private research groups and local residents of the Yukon and Northwest Territories. Major participants include the federal Department of Fisheries and Oceans which provides the information on fish resources, the Northwest Territories Wildlife Service which is reponsible for the terrestrial wildlife data, and the Lands Directorate of Environment Canada which produces the ecological land classification information, co-ordinates the socio-economic and cultural data collection, and is responsible for the overall production of the maps and texts.

In addition to the published maps, several reports have been prepared which are based on the background research used in the preparation of the maps. A list of these reports is included in the Appendix.

G.G. McLean
Program Coordinator
Land Use Information Series

ACKNOWLEDGEMENTS

This report on marine mammals and their habitats in the Lancaster Sound area of the Northwest Territories was prepared by Michele McLaughlin under the auspices of the Arctic Biological Station, Ste. Anne de Bellevue, Qubec. In addition, Roy Vontobel was responsible for editing the manuscript and John Reid of the Lands Directorate, Department of the Environment supervised the assembling of the base map. Jennifer Moore also of the Lands Directorate co-ordinated the overall preparation of the report.

Marine Mammal Study Area

Narwhals in Lancaster Sound. Photo by Jennifer Moore, Environment Canada.

Adult seal in winter. Photo by NFB Phototheque.

INTRODUCTION

The data in this report were collected and compiled as the marine mammal contribution to the 1980-81 study area of the northern Land Use Information Series mapping program (NLUIS). This study area focussing on Lancaster Sound includes the marine areas surrounding north Baffin, Devon, Cornwallis and Somerset islands, and north Boothia Peninsula (see map on page ii).

Lancaster Sound is an especially productive biological marine area of the Arctic. Each spring and summer, many thousands of narwhals, beluga whales, harp seals, walruses and small numbers of the greatly endangered bowhead whales enter Lancaster Sound from the east to spend the summer in its waters or to push on to channels and inlets to the west, south and north. Each fall, these animals return eastward through the sound and proceed to their wintering areas. In addition, the Lancaster Sound region supports many thousands of ringed and bearded seals, and polar bears year-round. Millions of seabirds also nest within this area.

Little information was available about the ecology of the Sound and its adjacent waters until recently, when interest in the region was spurred by petroleum exploration and mining development. Perhaps, with foresight and proper management, the interests of both conservation and economic development can be accommodated in this area in the future.

METHODS AND AIMS

This study of marine mammals involved compilation of an extensive, area-specific bibliography on Lancaster Sound and adjacent waters, and a thorough review of this literature. Both published literature and unpublished reports have been cited. Most of the information ultimately used in the preparation of the NLUIS maps was taken from the unpublished reports of recent environmental assessment research carried out by government agency personnel and by private firms contracted to petroleum companies. Interviews with field personnel and government researchers provided additional data, clarification and guidance.

Initially the data were compiled on 1:250,000 scale maps, using the codes and symbols from the NLUIS maps (see Marine Mammal map legend, page 4). This report has incorporated the text, and the map numbers and names of the 1:250,000 scale maps, and adapted this information to a general marine mammal map at a scale of 1:1,000,000 (see sleeve, inside back cover). For easy reference, an inset map has been included at the beginning of each text description and is keyed to the general map.

There are several points which should be considered when using the map and text information on marine mammals in the Lancaster Sound region. Availability of scientific information varies greatly throughout the study area. Very few conclusions or assumptions were made when gaps in this information existed. Boundary lines were drawn only when important concentrations of animals were known for certain. Also it is difficult to delineate particular areas because the ice conditions, which largely determine the distributions and migrations of marine mammals, vary from year to year. As a result of the influence exerted by ice conditions, information on the map should be considered to represent average of "usual" distributions and migration routes.

In summary, the overall picture that emerges from this study is that of a biologically rich area, largely ignored until recently. Much data is still needed, particularly in the southern portions of the study area, but also in those sections most intensively surveyed, such as eastern Lancaster Sound.

Walrus on ice floe. Photo by NFB Phototheque/Terry Pearce, 1968.

Seal pup on northern Baffin Island. Photo by NFB Phototheque/D. Wilkinson, 1955.

Polar bears: mother and two cubs, in Barrow Strait. Photo by Jennifer Moore
Environment Canada.

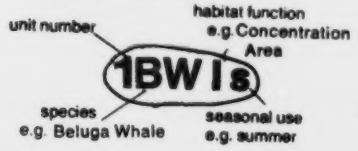
Ringed seal caught at breathing hole. Photo by J.D. Soper, 1925.

MARINE MAMMALS

WILDLIFE LEGEND

This legend is modified after the *Arctic Ecology Map Series*

EXPLANATION OF SYMBOL



Note: Symbols not associated with boundaries indicate a general occurrence where approximate limits cannot be established. Migration routes indicate very general areas and directions. All sanctuaries are considered critical areas.

CODE	BOUNDARY	SPECIES
BW	——	Beluga whale
HB	——	Bearded seal
HH	——	Harp seal
HR	——	Ringed seal
N	——	Narwhal
P	——	Polar bear
RE	—▲—	Rare or endangered species e.g. Bowhead whale
WL	——	Walrus

HABITAT FUNCTION

b	Breeding area
d	Denning area
f	Feeding Area
l	Staging or concentration area
m	Migratory route
n	Calving or breeding area
r	Range
t	All habitat functions

SEASONAL UTILIZATION

s	Spring or summer
w	Fall or winter
y	Year-round use

OTHER

Migration route

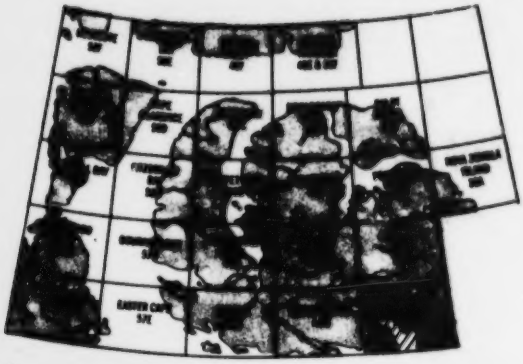
HAZARDS TO MARINE MAMMALS

General comments: To date, few scientific experiments have been conducted to determine the direct and indirect effects of disturbances to Arctic marine mammal populations by industrial activities (oil pollution, noise, seismic blasts, shipping). However, harassment of whales and walruses during calving and post-calving periods, and of seals during pupping periods, is clearly undesirable. Areas which have important concentrations of marine mammals (major feeding areas and migration corridors) should be avoided during critical periods.

MAP

DESCRIPTIONS

STEENSBY INLET - 37F



HRty
1 HBty
WLrs

Ringed seals are common in the northeastern part of Steensby Inlet, but they are most numerous in the southern portions. The inlet provides good ringed seal habitat: there is stable fast ice for pupping in winter and spring, and the ice remains well into summer. Bearded seals are found in small numbers in relatively shallow waters. Walruses have been reported in Steensby Inlet in summer. (Anders 1965; Beaubier 1970; Bradley 1970; Crowe 1970; Freeman 1976; Mansfield 1967.)

2 BWrs

Beluga whales may enter Steensby Inlet in the summer (Freeman 1976).

3F

The rivers flowing into Steensby Inlet contain anadromous Arctic char. In late spring, the char descend to the sea and generally pass the summer in the vicinity of estuaries. They return upriver in autumn. The Ravn River system (see Erichsen Lake, 47E) has the best char potential of the region. (Anders 1965; Fenco Consultants Ltd. 1978.)

ICEBOUND LAKE - 37G

1 HRty HHls Ringed seals are year-round residents throughout Tay Sound and Paquet Bay (Bissett 1968a). Harp seals concentrate in Tay Sound during the summer (Miller 1955).

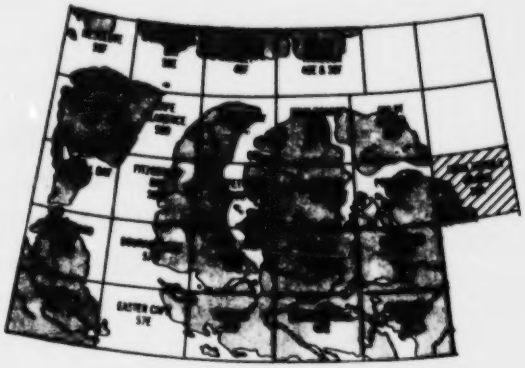
2 HBrs Bearded seals are found in moderate numbers during summer in the southern portions of Paquet Bay (Bissett 1968a).

3 Prs Polar bears are found in this area in summer. They are able to prolong their feeding on seals in Coutts Inlet and in North Arm as the sea ice remains in these areas well into the warmer months. During the period of minimum ice cover, the bears range on the adjacent land. (Fenco Consultants Ltd. 1978.)

4 Nls Narwhals enter Tay Sound and North Arm in July and August as the ice breaks up and they leave the inlets before freeze-up in late September. These months, when the narwhals are in the deep waters of inlets and fiords, likely coincide with a period of intensive feeding on Arctic cod. (Bissett 1968a; Hay 1976; Miller 1955; Silverman 1979.)

5F Anadromous Arctic char occur in the rivers flowing into Tay Sound, Paquet Bay and Coutts Inlet. The char spawn in autumn in lakes or river pools. In late spring, they descend to the sea and they return upriver in autumn. (Fenco Consultants Ltd. 1978.)

NOVA ZEMBLA ISLAND - 38A



1 Pls The ice off Baffin Island's east coast is an area of spring concentration for polar bears, where they breed, and hunt seals intensively. Bears are especially numerous between Cape Walter Bathurst, northwest of this map section on Bylot Island, and Cape Macculloch. This area includes the Pond Inlet ice floe edge. (Bissett 1968a; Fenco Consultants Ltd. 1978; Miller 1955; Schweinsburg *et al.* 1977; Treude 1977.)

2 P^{rs}_{dw} The northeast coast of Baffin Island is an area of polar bear summer retreat, used by the bears when disappearance of the floe ice forces them onto land. The sheltered waters of Coutts Inlet and North Arm retain ice long into the summer, and provide continued hunting. The region probably also is a maternity denning habitat in fall and winter. Cape Coutts, in particular, has been identified as a denning and hunting area. When bears emerge from their dens in spring, they move to the coastal ice to hunt seals. (Canadian Wildlife Service 1972; Fenco Consultants Ltd. 1978; Freeman 1976; Schweinsburg *et al.* 1977.)

3 Nls
HHls
HRls
HBls
WLls
BWls
REls

In June and July, large numbers of narwhals gather at the ice floe edge at the mouth of Pond Inlet, where they await the break-up of the ice. Harp seals, ringed and bearded seals, walruses and small numbers of beluga whales also congregate at the floe edge in late spring. Historically, this floe edge supported large catches of bowhead whales during the period of arctic whaling. Today, anywhere in the Canadian eastern Arctic, the bowhead is considered an endangered species. Small numbers of them can be

found along the Pond Inlet floe edge in June and July. This is evidently an important concentration area for many marine mammals (see Pond Inlet, 38B). (Bissett 1968a; Davis *et al.* 1978a; Finley *et al.* 1979; Freeman 1976; Miller 1955; Silverman 1979; R. Webb 1976.)

4 Nm^{S}_{W} REm^{S}_{W} As the ice in Pond Inlet begins to break up in late spring, narwhals enter through cracks and leads, and head for regular summering grounds in Pond Inlet, Eclipse Sound and Milne Inlet. This appears to be an important feeding time for narwhals, which consume primarily Arctic cod. Small numbers of bowhead whales also move into Pond Inlet. Some killer whales, which prey on other marine mammals, enter after the bowheads, in late July and August. (Bissett 1968a; Freeman 1976; Miller 1955.)

5 Nmw REmw HHmw WLmw In autumn, narwhals move southward from Pond Inlet and Lancaster Sound along the east coast of Baffin Island. Bowheads, harp seals, and walruses also travel this route in fall. (Davis *et al.* 1978a; R. Webb 1976.)

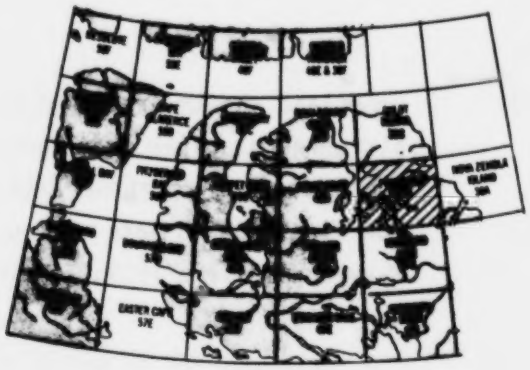
6 Nm^{S}_{W} Narwhals move into North Arm and Coutts Inlet in July as the ice breaks up. They summer and feed in the deep waters of these inlets and leave ahead of freeze-up in the fall (Bissett 1968a).

7 HBrs In summer, bearded seals are found in Coutts Inlet. They move out in September and October before the inlet freezes over (Bissett 1968a).

8 HRty Ringed seals are found year-round throughout the coastal areas of this map section. They overwinter in stable landfast ice by keeping open breathing holes. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

9F Greenland sharks are found in the Pond Inlet area, probably attracted by offal from narwhal and seal kills by Inuit hunters. Many of these kills take place along the Pond Inlet ice floe edge in late spring and early summer. (Freeman 1976; Mary-Rousselière 1959; Templeman 1963.)

POND INLET - 38B



1 Pls — The ice off the east coast of Bylot Island is a polar bear spring concentration area. They also are found in spring at the Pond Inlet ice floe edge, in the mouth of the inlet. They breed, and hunt seals on the ice during this season. (Bissett 1968a; Miller 1955; Schweinsburg *et al.* 1977; Treude 1977.)

2 P^{rs}_{dw} — The south and east coasts of Bylot Island and the northeast headland of Baffin Island are summer ranges for polar bears, and probably also support maternity denning in fall and winter. (Bissett 1968a; Canadian Wildlife Service 1972; Fenco Consultants Ltd. 1978; Freeman 1976; Schweinsburg *et al.* 1977.)

Nls
HHls
HRls
3 HBls
WLls
BWls
REls — These species all occur at the floe edge in the mouth of Pond Inlet in late spring and summer (see Nova Zembla Island, 38A). Large numbers of narwhals gather in June and July, awaiting the break-up of ice. Harp seals, ringed and bearded seals, walruses and small numbers of belugas also congregate in the area of the floe edge in late spring and summer. Small numbers of the endangered bowhead whale may be found there in June and July. As the ice in Pond Inlet recedes, the animals waiting at the floe edge move into the inlet. (Bissett 1968a; Davis *et al.* 1978a; Finley *et al.* 1979; Freeman 1976; Miller 1955; R. Webb 1976; Silverman 1979.)

Nm^{s}_{w}
4 HHm^{s}_{w}
REm^{s}_{w} — Thousands of narwhals enter Pond Inlet as the ice breaks up in early summer. In July, small groups move westward, passing near the community of Pond Inlet and also along the south coast of

Bylot Island. The time of spring break-up appears to be especially important for feeding narwhals, which consume mainly Arctic cod. The return migration takes place in September and October before freeze-up; observers have counted 2,000 whales passing Pond Inlet settlement in September. Harp seals also enter Pond Inlet with the receding ice in summer and move into Eclipse and Tay sounds. They return along a similar route in September. Small numbers of bowhead whales travel into Pond Inlet and Eclipse Sound each summer. Some killer whales enter later, in late July and August. Both kinds of whales leave the area ahead of freeze-up. (Bissett 1968a; Hay 1976; Miller 1955; Silverman 1979.)

5 Nls The deep waters of Pond Inlet and Eclipse Sound are important feeding areas for narwhals in summer. Concentrations usually are found in Tay Sound. Some calving may occur in these waters. (Bissett 1968a; Canadian Wildlife Service 1972; Hay 1976; Miller 1955; R. Webb 1976; Silverman 1979.)

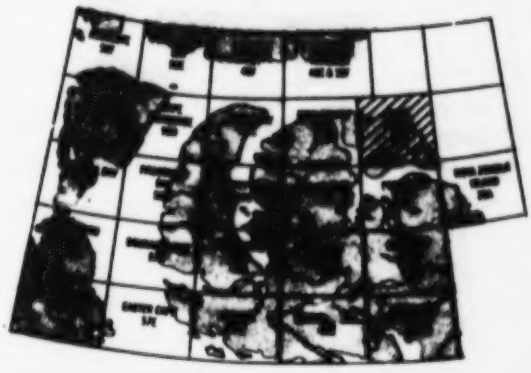
6 RErs Besides small numbers of bowhead whales, a few killer whales also are found in Pond Inlet and Eclipse Sound during the summer; the latter prey upon other marine mammals, mainly narwhals and seals. (Bissett 1968a; Mansfield 1971; Miller 1955.)

HHls
7 HRty Harp seals concentrate in Tay Sound in summer (Miller 1955).
HBty Ringed seals are abundant year-round residents throughout the marine areas of this map section, particularly along coasts. Bearded seals also are found throughout the area, primarily in summer. Some move into Pond Inlet and Eclipse Sound with the break-up of ice in summer and leave in late September. (Fenco Consultants Ltd.; Mansfield 1967.)

8 Pdw Polar bears den in fall and winter in the Ragged Island area northeast of Milne Inlet (Fenco Consultants Ltd. 1978).

9F The Salmon River, near Pond Inlet settlement, and a river that flows into Guys Bight contain populations of anadromous Arctic char. These fish run to sea in late spring and early summer, and return upriver in late summer. Arctic cod occur in the area around Pond Inlet settlement as well. Other species found there include Greenland sharks, sculpins, fish doctors, rock grenadiers, and Greenland halibut. Greenland sharks are common in winter and spring in Pond Inlet, attracted by the offal from Inuit narwhal and seal kills. (Bissett 1968a; Ellis 1962; Freeman 1976; Mary-Rousselière 1959; National Museum of Canada, unpubl. data; Templeman 1963.)

BYLOT ISLAND - 38C



1 Pls

Polar bears concentrate in spring on the ice off the north and east coasts of Bylot Island, where they breed, and hunt seals along the floe edges and in unstable offshore ice. (Fenco Consultants Ltd. 1978; Schweinsburg *et al.* 1977.)

2 P^{rs}_{dw}

The coasts of Bylot Island provide fall and winter denning habitat for polar bears, as well as summer range after the shore ice has disappeared. (Fenco Consultants Ltd. 1978; Freeman 1976; Schweinsburg *et al.* 1977.)

Nm^{s}_{w}
3 HHm^{s}_{w}
REm^{s}_{w}

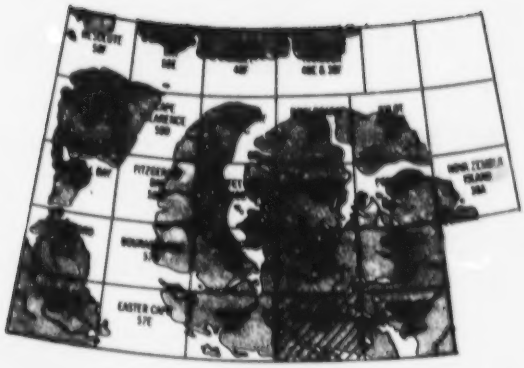
During June and July, thousands of narwhals enter Lancaster Sound from Baffin Bay to the east, moving westward past Cape Hay on northern Bylot Island (see Navy Board Inlet, 48D). Peak numbers occur in July. Traveling in small groups, the narwhals are found both offshore and close to the coast of Bylot Island. Tens of thousands of harp seals also enter the area from Baffin Bay, usually after the narwhals. Often in large groups, the seals continue moving westward in July and August. Small numbers of bowhead whales follow this route through Lancaster Sound in June and July, usually traveling singly, either close to shore or in mid-channel. All three species head for the fiords and channels of Lancaster Sound to the west of the area in this map section. The return migration of these animals along this route usually occurs in September and October, before freeze-up. (Greendale and Brousseau-Greendale 1976; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977; Sergeant and Hay 1979; Tuck 1957.)

4 WLms BWms Small numbers of beluga whales migrate westward through this area in June and July. Most of the aproximately 15,000 belugas that enter Lancaster Sound in spring travel along the north shore of the sound. Walruses and bearded seals, also in small numbers, move westward past Cape Hay in July. Belugas and walruses return east in September along the northern margin of the sound. (Greendale and Brousseau-Greendale 1976; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977; Sergeant and Hay 1979.)

5 Nmw HHmw WLmw REmw The southward migration of narwhals, harp seals, walruses, and perhaps some bowhead whales during September and October appears to be along the east coast of Bylot Island (Davis *et al.* 1978a).

6 HRty Ringed seals are dispersed in the coastal areas of this map section. They do not extend far into Baffin Bay. The adults occupy stable fast ice, and younger seals inhabit the ice floe edge and moving pack ice in the winter. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

ERICHSEN LAKE - 47E



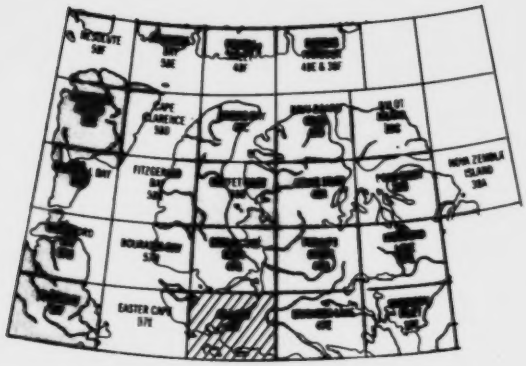
1 BWrs Beluga whales occasionally travel into Murray Maxwell Bay in summer (Freeman 1976).

2 Pdw This area of suitable habitat for polar bear maternity denning in fall and winter continues to the west and encompasses a coastal section of southwestern Baffin Island (Fenco Consultants Ltd. 1978).

3 HRty HBty WLrs Ringed seals are common in Murray Maxwell Bay. Both Murray Maxwell Bay and the east coast of Gifford Fiord provide stable fast ice for ringed seal pupping. Bearded seals also are encountered in Murray Maxwell Bay. Walruses, hunted throughout Murray Maxwell Bay until recently, have been observed there in summer. (Anders 1965; Bradley 1970; Crowe 1970; Freeman 1976; Mansfield 1967.)

4 [illegible] The rivers that flow into Murray Maxwell Bay, such as the Kukaluk River, contain populations of anadromous Arctic char. The Gifford River-Gifford Fiord system also supports char, and the Ravn River-Erichsen Lake system has the best char potential of the region. In late spring, char travel downriver to the sea, and return to the rivers in autumn. (Anders 1965; Fenco Consultants Ltd. 1978.)

AGU BAY - 47F



1 Prs Polar bears are common in Bernier Bay during spring and summer. The ice that remains in the bay well into summer allows the bears to prolong their hunting of seals. (Bissett 1968a; Freeman 1976.)

2 Pdw This area, which provides suitable polar bear denning habitat in fall and winter, includes Crown Prince Frederik Island and a portion of the southwest Baffin Island coast. (Fenco Consultants Ltd. 1978; Jonkel 1976; Stirling *et al.* 1979.)

Pr^{s}_{w}
3 HRty
HBty Polar bears are present in the Agu Bay area between autumn and spring, when they hunt seals on the ice prior to break-up in the summer. In early spring, the bears concentrate around Crown Prince Frederik Island. Ringed seals occur throughout Agu Bay and the Gulf of Boothia, and are the main prey of polar bears. Bearded seals, much less common than ringed seals, are found in relatively shallow waters throughout this area. (Anders 1965; Beaubier 1970; Bissett 1968a; Freeman 1976; T. Manning, pers. comm.; Mansfield 1967.)

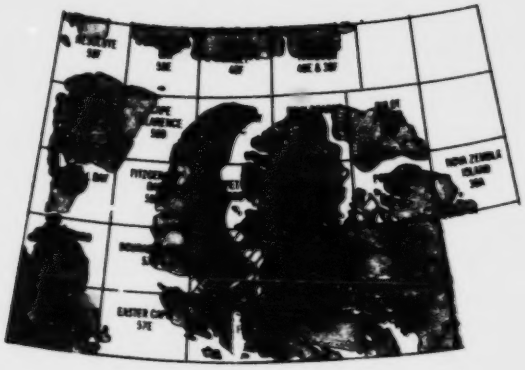
4 Plw Polar bears concentrate on the ice around Kimakto Peninsula in the fall (Beaubier 1970; Crowe 1970).

5 Nrs Moderate numbers of narwhals may be found in Agu Bay in the summer (B. Kemper, pers. comm.). They are reported to occur in Autridge Bay as well (Freeman 1976).

6 WLrs Walruses have been seen in summer along the west coast of Crown Prince Frederik Island (Anders 1965; Loughrey 1959; Mansfield 1959).

7 F Anadromous Arctic char occur in rivers flowing into Bernier Bay and Berlinguet Inlet, in the Saputing Lake-Bell Bay system, in streams flowing into Whyte Inlet, and in the Ivisarak Lake-Nyeboe Fiord and the Navarana Lake-Foss Fiord systems. The char descend to sea in late spring and return upriver in the fall, spawning in river pools or lakes. (Anders 1965; Fenco Consultants Ltd. 1978.)

BERLINGUET INLET - 47G



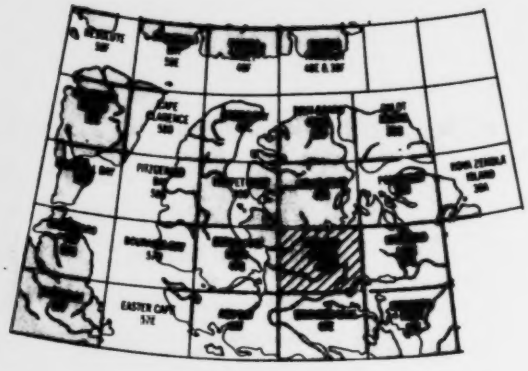
1 Pdw The northern tip of Steensby Peninsula provides suitable maternity denning habitat for polar bears in fall and winter (Jonkel 1976).

2 Prs Polar bears are common in Bernier Bay during spring and summer. The ice which persists in the bay in summer permits a prolonged period of predation on seals (Bissett 1968a).

3 HRty HBty Ringed seals and bearded seals can be found throughout southern Admiralty Inlet and in Bernier Bay, but they are most numerous in the Jungersen Bay area (Bissett 1968a).

4 F The rivers that flow into southern Admiralty Inlet, Berlinguet Inlet, Easter Sound, and Bell Bay contain populations of Arctic char. These fish descend to sea in late spring, and return to the rivers in autumn (Bissett 1968a; B. Fallis, pers. comm.).

PHILLIPS CREEK - 47H



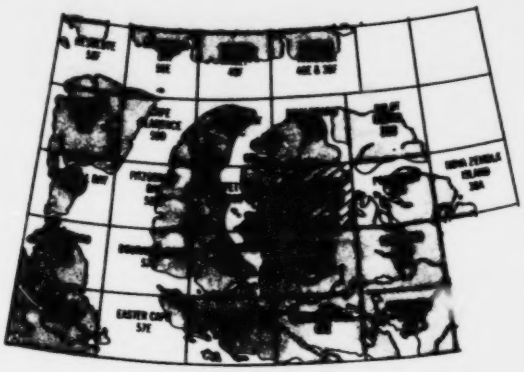
1 Nls Thousands of narwhals concentrate in Milne Inlet in July and August. Calving may occur there, and the area appears important as a post-calving and feeding ground. Narwhals feed intensively during this period, mainly on Arctic cod. (Bissett 1968a; Canadian Wildlife Service 1972; Mansfield *et al.* 1975; Silverman 1979.)

2 Prs Milne Inlet is a summering locale for polar bears (Jonkel 1976).

3 HRty The ringed seal may be found in Milne Inlet year-round (Mansfield 1967).

4 F The Phillips Creek-Milne Inlet system supports a population of anadromous Arctic char which descend to sea in late spring and return upriver in autumn (Fenco Consultants Ltd. 1978).

MILNE INLET - 48A



1 Prs — This is the southernmost extension of a polar bear summering area on the east coast of Borden Peninsula (see Navy Board Inlet, 48D). (Fenco Consultants Ltd. 1978.)

2 P^{rs}_{dw} — This map section includes a small portion of Bylot Island, nearly the entire coast of which provides suitable habitat for polar bear denning in fall and winter, and for summer range during the period of minimum sea ice (Fenco Consultants Ltd. 1978).

3 Pdw — The Ragged Island area contains polar bear fall and winter denning habitat (Fenco Consultants Ltd. 1978).

4 Prs — Milne Inlet is a summering area for polar bears. Floe ice remains well into the summer, allowing the bears to prolong their hunting of seals. (Jonkel 1976.)

Nm^{s}_{w}
5 HHm^{s}_{w}
REm^{s}_{w} — As the ice breaks up in July and August, many narwhals move south in Navy Board Inlet to reach summering grounds in Eclipse Sound and Milne Inlet. Harp seals, in large numbers, follow a similar route, but arrive later than the narwhals. A few bowhead whales and also killer whales may follow this route in summer. All these animals leave this region in September and October before the sea ice forms in the fall. (Bissett 1968a; Finley and Johnston 1977; Mansfield *et al.* 1975b; Miller 1955.)

6 Nls — Thousands of narwhals concentrate in Milne Inlet, Eclipse Sound, Tremblay Sound and Koluktoo Bay in July and August. Koluktoo

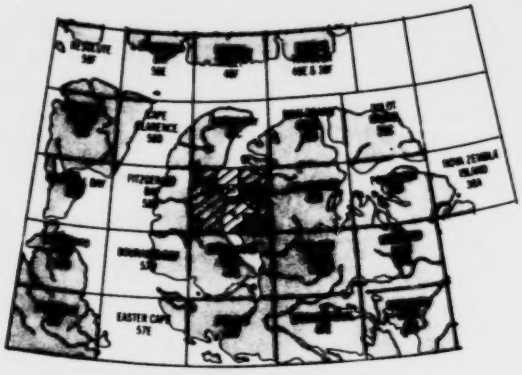
Bay, in particular, supports large numbers of these whales in summer. These areas may be calving grounds; undoubtedly they are important post-calving and feeding places. Narwhals feed intensively during this time. Arctic cod are the main prey, although squids, shrimps, and mysid crustaceans also are important food for narwhals. (Bissett 1968a; Bruemmer 1972; Canadian Wildlife Service 1972; Hay and McClung 1976; MacInnis 1976; Mansfield *et al.* 1975b; Miller 1955; R. Webb 1976; Silverman 1979.)

7 RErs In summer there may be a few bowhead whales in Eclipse Sound and Milne Inlet. Killer whales also are found in these areas in late July and August. (Bissett 1968a; Ellis 1957; B. Fallis, pers. comm.; Hay and Sergeant 1976; Mansfield 1971; Miller 1955.)

8 HRty HBty Ringed seals are numerous year-round throughout the marine areas of this map section. They feed on Arctic cod and crustaceans. Bearded seals, in smaller numbers, also are dispersed throughout the area, especially in summer. They feed in relatively shallow waters, consuming benthic organisms such as mollusks and sea cucumbers and also some Arctic cod. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

9 F The Robertson River-Koluktoo Bay system has a large population of anadromous Arctic char. These fish descend to the sea in early summer and return upriver in late summer or early fall. Greenland sharks are common from Eclipse Sound to Koluktoo Bay. Greenland halibut, sculpins and fish doctors also occur in Eclipse Sound. (Beck and Mansfield 1969; Bissett 1968a; Bruemmer 1969; Ellis 1962; Fenco Consultants Ltd. 1978; Ferguson 1974; Freeman 1976; Milne and Smiley 1978.)

MOFFET INLET - 48B



1 Prs An extensive portion of Admiralty Inlet and part of the east coast of Brodeur Peninsula are areas of summer retreat for polar bears. Summer retreats may be significant to the reproductive potential of bears since they appear to be important to females and young bears. (Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg *et al.* 1977.)

2 Pdw The west coast of Steensby Peninsula provides suitable denning habitat for polar bears in fall and winter (Jonkel 1976).

3 Nm^{S}_{W} Thousands of narwhals move southward along the west side of Admiralty Inlet and, to a lesser extent, along the east side in late July and August as the ice breaks up. In September these whales return north ahead of freeze-up. (Bissett 1968a; Land 1977.)

4 $^{Nls}_{HHls}$ Admiralty Inlet supports a major summer concentration of narwhals, an estimated 8,000 to 10,000, in late July and August. Calving may occur in the area, and it is also an important post-calving ground as well as a summering locale for adults. Some narwhals go as far as the southern end of the inlet, and they are common around Iglorsuit Island and Yeoman Island. They feed intensively at this time, on Arctic cod mainly. There are hundreds of harp seals in southern Admiralty Inlet in summer. They are notably abundant in the waters of a triangle joining Yeoman Island, Moffet Inlet and a point north on the east side of the inlet halfway to Adams Sound. (Bissett 1968a; B. Fallis, pers. comm.;

Finley and Johnston 1977; Milne and Smiley 1978.)

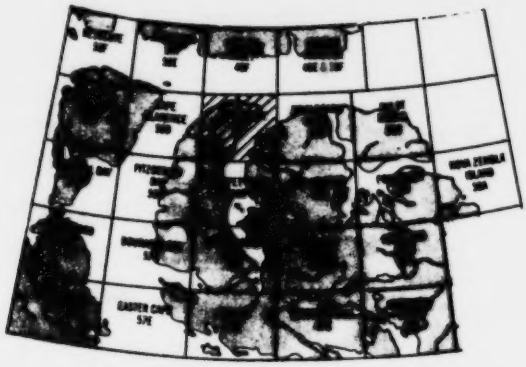
5 HHm^{S}_{W} Many harp seals travel along the east side of Admiralty Inlet in summer, heading towards the southern part of the inlet. They return north in September. (Bissett 1968a; B. Fallis, pers. comm.)

6 $^{HRty}_{HBty}$ Ringed and bearded seals range throughout the marine areas of this map section (Fenco Consultants Ltd. 1978; Mansfield 1967).

7 RErs Small numbers of endangered bowhead whales occur in southern Admiralty Inlet in summer. Killer whales also are encountered in this area in late summer, where they hunt narwhals and seals. (B. Fallis, pers. comm.; Hay and Sergeant 1976.)

8 F Anadromous Arctic char exist in the rivers which empty into Admiralty Inlet and Moffet Inlet, as indicated on the map section. These fish descend to the sea in late spring and return upriver in late summer, spawning in lakes or river pools in the fall. There are char and Arctic cod in Arctic Bay and Adams Sound as well, and sculpins are found throughout the region. (Bissett 1968a; Dunbar 1947; Ellis 1962; B. Fallis, pers. comm.; Fenco Consultants Ltd. 1978; Freeman 1976.)

ARCTIC BAY - 48C



1 Pls — The ice off the coasts of northern Borden and Brodeur peninsulas and at the mouth of Admiralty Inlet is a spring concentration area for polar bears. In spring and early summer they are especially numerous at the ice floe edge at the mouth of the inlet. They breed in spring, and hunt the seals which are abundant along the floe edge. (Freeman 1976; Jonkel 1976; Schweinsburg *et al.* 1977.)

2 P^{rs}_{dw} — The north coast of Borden Peninsula and the north and west coasts of Brodeur Peninsula provide suitable habitat for polar bear denning in fall and winter. These areas also provide summer retreat habitat for bears when coastal ice has disappeared; the bears may be found in summer snow dens there. (Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg 1976, 1979; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

3 Prs — The east coast of Brodeur Peninsula and the west coast of Borden Peninsula, as well as the ice in Admiralty Inlet, provide summer range for polar bears (Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979).

4 Nls, BWls, WLls, RElls, HHls, HRls, HBls — Large numbers of narwhals gather at the ice floe edge at the mouth of Admiralty Inlet in June, awaiting break-up of the ice in the inlet. Other species which concentrate there in late spring are belugas, walruses, small numbers of bowhead whales, and ringed, bearded and harp seals. (Bissett 1968a; Freeman 1976; Hay and Sergeant 1976.)

Nm^{S}_{W} HHm^{S}_{W} REm^{S}_{W} BWm^{S}_{W} WLm^{S}_{W} Most of the Lancaster Sound narwhal population, 10,000 to 30,000 animals, moves south into Navy Board Inlet and Admiralty Inlet in summer. Thousands enter Admiralty Inlet as the ice breaks up in June and July. They return north and east in September before freeze-up. Several thousand harp seals also migrate into Admiralty Inlet in July and leave in September. Small numbers of bowhead whales enter the inlet in summer to feed in its deep waters. Killer whales come, too, some concentrating along the ice floe edge. Belugas and walruses also penetrate into the inlet and are more common in the northern part. (Bissett 1968a; B. Fallis, pers. comm.; Freeman 1976; Hay and Sergeant 1976; Milne and Smiley 1978; Renewable Resources Consulting Services Ltd. 1977.)

6 Nls $HHls$ Admiralty Inlet supports a major summer concentration of narwhals, an estimated 8,000 to 10,000 animals, in late July and August. Calving may occur there, and the deep waters of the inlet are an important post-calving ground. The adults may feed intensively at this time, mainly on Arctic cod. Several thousand harp seals summer in Admiralty Inlet. (Bissett 1968a; B. Fallis, pers. comm.; Finley and Johnston 1977; Kemper 1976; Milne and Smiley 1978.)

7 Nm^{S}_{W} The thousands of narwhals that enter Admiralty Inlet in summer move mainly along the west side of the inlet. They return in September before freeze-up. (Bissett 1968a; Land 1977.)

8 HHm^{S}_{W} Nm^{S}_{W} Several thousand harp seals which move south into Admiralty Inlet travel mainly along the east side of the inlet and return in September. Some narwhals move along this route, although most travel along the west shore. (Bissett 1968a; B. Fallis, pers. comm.)

Nm^{S}_{W}

9 REm^{S}_{W}

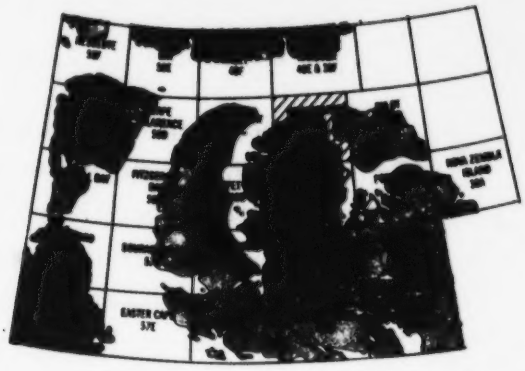
HHm^{S}_{W}

Some narwhals, perhaps several thousand, move westward through Lancaster Sound to reach Prince Regent Inlet and areas farther west (see Cape Clarence, 58D). They return eastward along this route in September. Small numbers of bowhead whales also travel west offshore and return in September and October. Harp seals pass westward in July, returning in September. (Davis *et al.* 1978a; Finley 1976; Finley and Johnston 1977; Hay and Sergeant 1976.)

10 $^{HRty}_{HBty}$ Ringed seals are present year-round in the marine areas of this map section, and are numerous in the fast ice of the sheltered bays. The bearded seal, less common, also occurs in relatively shallow waters throughout the area. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

11 F Large shoals of Arctic cod are found in Strathcona Sound, and Arctic char and several species of sculpins also occur there. Other species found in lesser numbers include Greenland sharks, fish doctors, eelpouts, lumpsuckers, lumpfishes, pricklebacks, poachers, and polar cod. Char, cod and sculpins also are found in Arctic Bay and Adams Sound. (B.C. Research 1975; Bissett 1968a; Bohn and McElroy 1976; Bohn and Fallis 1978; Dunbar 1947; Ellis 1962; B. Fallis, pers. comm.; Fenco Consultants Ltd. 1978; Freeman 1976; National Museum of Canada, unpubl. data.)

NAVY BOARD INLET - 48D



1 Pls Polar bears concentrate in spring on the ice along the northern ends of Bylot Island and Borden Peninsula. These offshore areas, and the mouths of Navy Board and Admiralty inlets, are important spring habitats where the bears breed, and hunt seals along the floe edges and in unstable coastal ice. (Freeman 1976; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977; Schweinsburg *et al.* 1977.)

2 P^{rs}_{dw} The north and west coasts of Bylot Island and the northern tip of Borden Peninsula are used by polar bears for maternity denning in fall and winter. These regions also provide summer range when the disappearance of sea ice forces the bears onto land. Such summer retreat areas may be of particular importance to pregnant females and family groups. (Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg *et al.* 1977.)

3 Prs This section of northern Borden Peninsula also is a summer retreat area for polar bears (Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg *et al.* 1977).

Nm^{s}_{w}

4 HHm^{s}_{w}

REm^{s}_{w}

Narwhals enter Lancaster Sound in small numbers in May; peak migration through the area is in mid-July. An estimated 8,000 to 10,000 narwhals move westward past Cape Hay on Bylot Island in late June and July. About half the whales travel offshore, while the remainder are found along both coasts of Lancaster Sound. Their destinations are regular summering grounds in the deep inlets and fiords of northern Baffin Island and the central Arctic

Archipelago, such as Navy Board Inlet, Admiralty Inlet (see Arctic Bay, 48C), Prince Regent Inlet (see Cape Clarence, 58D), and Peel Sound (see Resolute, 58F). Small numbers of bowhead whales pass westward by Cape Hay in June and July. Some remain to summer in the open waters of Lancaster Sound, and others continue on into Navy Board Inlet or Admiralty Inlet. The bowheads leave these areas in September and October, moving eastward into Baffin Bay. As many as 150,000 harp seals may enter Lancaster Sound in summer, traveling to the west past Cape Hay in July and returning east in September. (Greendale and Brousseau-Greendale 1976; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977; Tuck 1957.)

5 Nm^{s}_{w} HHm^{s}_{w} Large numbers of narwhals enter Navy Board Inlet as the ice breaks up in July, to summer in the inlet and in Eclipse Sound to the south. Many harp seals follow a similar route in July. (Bissett 1968a; Finley and Johnston 1977; Johnson *et al.* 1976; Miller 1955; Renewable Resources Consulting Services Ltd. 1977; Silverman 1979.)

6 Nls HHls Narwhals occur in large numbers in Navy Board Inlet during the summer. Many harp seals also summer there, particularly near the entrance of the inlet. (Bissett 1968a; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

7 BWms WLms Small numbers of beluga whales and walruses migrate west past Cape Hay on Bylot Island in June and July, and continue past Navy Board Inlet. Their return migration is along the north shore of Lancaster Sound in the fall. (Finley and Johnston 1977; Greendale and Brousseau-Greendale 1976; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

8 WLls Walruses frequently are found along the ice edge in the mouth of Navy Board Inlet in July. The Wollaston Islands are a hauling-out site for some of these walruses later in the summer when the ice has disappeared. (Bissett 1968a; Canadian Wildlife

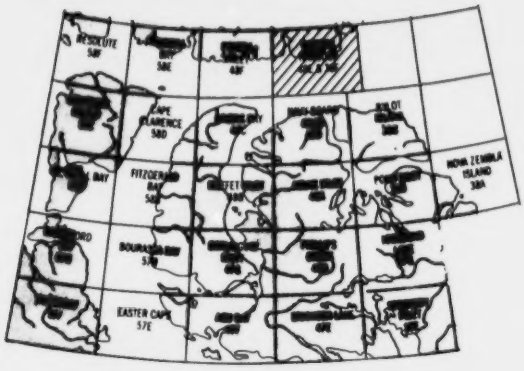
Service 1972; Ellis 1957; Freeman 1976; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

9 REs — A few bowhead whales summer and feed in the open waters of Lancaster Sound (Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977).

10 HRty HBty — Ringed seals are abundant year-round throughout the marine areas of this map section. Although the less common bearded seal ranges throughout these waters, it occurs in the Navy Board Inlet area mainly in summer. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

11 F — At least one stream flowing into Tay Bay contains anadromous Arctic char (Bissett 1968a).

DUNDAS HARBOUR - 48E



1 Pls This is the northern extension, on this map section, of a polar bear spring concentration area on the ice off the north coast of Bylot Island. (Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977; Schweinsburg *et al.* 1977.)

2 P^{rs}_{dw} On the south coast of Devon Island is a polar bear maternity denning habitat. Bears generally den in the vicinity of bays and fiords and in river valleys. The Croker Bay area, in particular, appears to have many bears in winter. This coast also serves as summer range for bears; they hunt in the ice-spotted bays where there are seals in the summer. The adjacent land provides retreat for female bears and family groups when the ice has disappeared later in the summer. There appear to be more bears on the north side of Lancaster Sound than on the south shore. (Duvall and Handley 1946; Fenco Consultants Ltd. 1978; Schweinsburg *et al.* 1977.)

3 Pls Devon Island's south coast is also an important spring habitat for polar bears. They concentrate on the fast ice along this coast and on the offshore pan ice to hunt seals in spring, and they breed during this period. Croker Bay and Dundas Harbour both attract polar bears in spring. (Canadian Wildlife Service 1972; Duvall and Handley 1946; Johnson *et al.* 1976; Lawrie 1950; Renewable Resources Consulting Services Ltd. 1977; Schweinsburg *et al.* 1977.)

4 BWm^{s}_{w} Beluga whales begin to move into Lancaster Sound from northern Baffin Bay along the east coast of Devon Island as early as late

March. They move westward, traveling along the lead between the fast ice of southern Devon Island and the offshore pack ice. Peak numbers (an estimated 10,000 to 15,000 whales) are in June and early July. Some belugas also travel through southern Lancaster Sound, but all return east in September along the northern shore. This fall migration is intense, with large groups of belugas moving quickly eastward in a few weeks, heading for wintering grounds in northern Baffin Bay or at the edge of the Davis Strait pack ice. (Davis *et al.* 1978a; Davis and Finley 1979; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

5 $\begin{matrix}BWlw\\Nlw\end{matrix}$ Hundreds of belugas occupy Croker Bay and Bethune Inlet in September during their fall eastward migration. Arctic cod, the main food species, makes Bethune Inlet a major feeding area during this time. Narwhals also occur in small numbers in Croker Bay in September. (Davis and Finley 1979; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

6 WLm^{S}_{W} Walruses, like the belugas, also follow the east coast of Devon Island into Lancaster Sound, small numbers traveling westward this way in early soring. Hundreds come in late spring and early summer, with the greatest numbers in June. They return in September and October. Some walruses appear to return to their wintering grounds by a more southerly route, along the coasts of Bylot and Baffin Islands. They probably winter in the area of open water in Baffin Bay known as the North Water, along the southern edge of the Davis Strait ice pack, and along the southwest coast of Greenland. (Davis *et al.* 1978a, 1978b; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

7 WLls Probably fewer than 1,000 walruses inhabit the Lancaster Sound region in summer. Croker Bay, Dundas Harbour, and the waters

between Cape Sherard and Philpots Island are walrus concentration areas from June to September. These animals prefer shallow waters over productive banks, where they feed on mollusks and other kinds of benthic organisms. When sea ice disappears in summer, the walruses haul out on land. There are two hauling-out places in this area: one on the east side of the entrance to Dundas Harbour and one at the southwest corner of Philpots Island. (Duvall and Handley 1946, 1948; Gunn 1949; Johnson *et al.* 1976; Jonkel 1976; Mansfield 1959; Renewable Resources Consulting Services Ltd. 1977.)

8 Nm^{S}_{W} HHm^{S}_{W} Narwhals, an estimated 10,000 to 30,000, arrive in Lancaster Sound from Baffin Bay between May and July. Peak migration is in mid-July, as the narwhals move westward to summering areas in the fiords and channels of Lancaster Sound. Most travel offshore, while the remainder move along the northern and southern shores of the sound. The return movement eastward occurs in September and October, when the narwhals head for their wintering grounds, mainly along the southern edge of the Davis Strait pack ice. Tens of thousands of harp seals migrate into Lancaster Sound in July. Many continue west to Barrow Strait (see Resolute, 58F). Others spend the summer along the south coast of Devon Island. In late September, they return along this route and then head south towards the spring breeding grounds near Newfoundland and in the Gulf of St. Lawrence. (Davis *et al.* 1978c; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

9 REm^{S}_{W} Probably fewer than 100 of the endangered bowhead whales enter Lancaster Sound during June and July. Solitary animals move west along the Devon Island south coast or farther offshore. Some stay to summer in the open waters of the sound. They gradually leave the area in September and October. (Duvall and Handley 1946; Finley and Johnston 1977; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

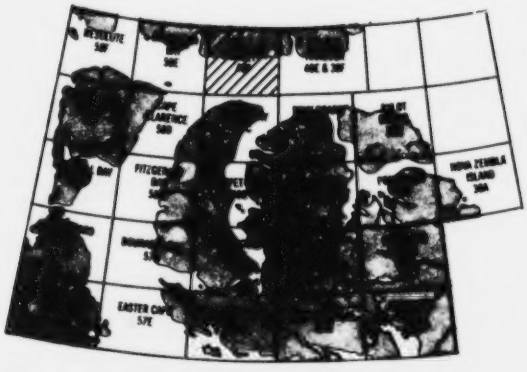
10 RErs Small numbers of bowhead whales range throughout Lancaster Sound from June to October, especially in areas with little ice cover. They summer and feed there, consuming enormous quantities of planktonic organisms. Killer whales occasionally appear in the sound in summer. (Duvall and Handley 1946; Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

11 HHls There are many harp seals in Croker Bay in September. Ringed and bearded seals in moderate numbers also occupy this bay during the summer. (Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977.)

12 HRty
HBty Thousands of ringed seals inhabit eastern Lancaster Sound year-round. In winter they are dispersed throughout the sound, while in summer they concentrate in coastal areas. Less common bearded seals tend to concentrate along the south coast of Devon Island, where there are extensive areas of shallow water with productive banks for these bottom feeders. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

13 F Arctic cod occur throughout Lancaster Sound in relatively high densities. Sculpins also are found in the Dundas Harbour area. (Duvall and Handley 1946; Lawrie 1950; National Museum of Canada, unpubl. data; Sekerak *et al.* 1976a.)

POWELL INLET - 48F



1 Pls — This is the northern extension, on this map section, of polar bear spring concentration on the ice along the southern margin of Lancaster Sound (Schweinsburg *et al.* 1977).

2 P^{rs}_{dw} — Polar bear maternity denning occurs on the south coast of Devon Island in fall and winter. River valleys and banks, and the land adjacent to bays are especially important for bear denning. In spring, the bears hunt seals in the bays of this coast and breed on the ice. This area also provides summer retreat for bears when coastal ice has disappeared and they are forced onto land. (Canadian Wildlife Service 1972; Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

3 Pls — The fast ice along the south coast of Devon Island is a spring concentration area for polar bears. They breed on the ice and hunt seals along ice floe edges and in unstable offshore ice where immature seals tend to congregate. (Johnson *et al.* 1976; Renewable Resources Consulting Services Ltd. 1977; Schweinsburg *et al.* 1977.)

4 BWm^{s}_{w} WLm^{s}_{w} — By early July, thousands of beluga whales that entered Lancaster Sound after spring break-up of the ice travel along Devon Island's south coast. Many head for summering grounds farther to the west in Prince Regent Inlet, southern Barrow Strait, and Peel Sound (see Cape Clarence, 58D, and Resolute, 58F). The return migration eastward in September is rapid and intense, with large herds moving along this coast. Hundreds of walruses migrate westward

along the south Devon Island coast in July, to summer in areas to the west of this map section. Small concentrations of walruses occur in July in Stratton and Burnett inlets and in Blanley Bay. Their return eastward dispersion takes place in September before fall freeze-up. (Davis *et al.* 1978a, 1978b; Finley and Johnston 1977; Renewable Resources Consulting Services Ltd. 1977; Sergeant and Brodie 1975; Sergeant and Hay 1979.)

Nm^{s}_{w}
5 HHm^{s}_{w}
REm^{s}_{w}

As the ice recedes, thousands of narwhals move westward through Lancaster Sound in June and July. Most travel offshore. Harp seals follow a similar route somewhat later, during July and August. Most narwhals and harp seals continue west to Barrow Strait, but some move southwest into Prince Regent Inlet. Small numbers of bowhead whales move through Lancaster Sound in June and July, but some remain to summer in the open waters of the sound, where they feed on planktonic organisms. A few bowheads also migrate in Prince Regent Inlet. All three species return east from their summering grounds in September and October. (Davis *et al.* 1978a; Finley and Johnston 1977; Renewable Resources Consulting Services Ltd. 1977.)

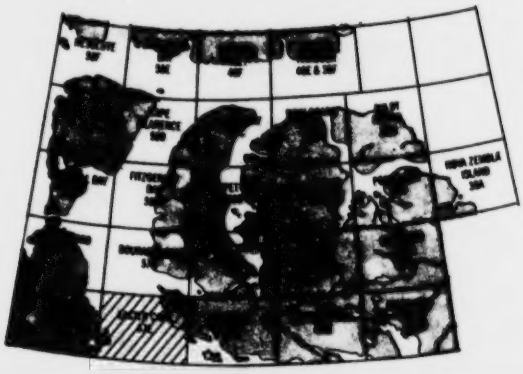
6 HRty
HBty

Ringed seals are year-round residents of the Lancaster Sound region and are found in all areas of fast ice. Less common bearded seals usually are found in drifting pack ice. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

7 F

Arctic cod occur in Lancaster Sound in relatively high densities. These fish are an important part of the diets of most marine mammals in the Arctic (Sekerak *et al.* 1976a).

EASTER CAPE - 57E



1 Prs Polar bears frequent Bernier Bay in spring and summer. Ice stays in the bay long into summer, allowing the bears to continue hunting seals there (Bissett 1968a).

2 Pdw The west coast of Baffin Island and the east coast of Boothia Peninsula provide suitable denning habitat for polar bears in fall and winter (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979).

3 Plw In the fall, polar bears concentrate on the ice around Kimakto Peninsula (Beaubier 1970; Crowe 1970; Freeman 1976).

4 Pls In the spring, polar bears concentrate in this large area. The bears hunt seals on the ice along the west side of the Gulf of Boothia during this time (Fenco Consultants Ltd. 1978; Mair 1954; Stirling *et al.* 1979; Villiers 1969).

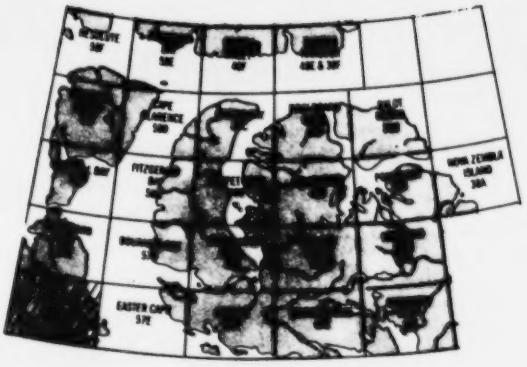
5 Prw This is the southern extension of an area of winter habitat for polar bears in the Gulf of Boothia. Open water and ringed seals attracts the bears to this area in winter (Read and Stephansson 1976).

6 WLrs HRrs HBrs Nrs BWrs Several species of marine mammals occur in Thom Bay during the summer. Small numbers of walruses and both ringed and bearded seals are seen regularly. Narwhals and beluga whales also occasionally occur there. (Finley *et al.* 1974; Freeman 1976; Loughrey 1959; Macpherson 1959; Read and Stephansson 1976; Villiers 1969.)

7 HRls The fast ice along the east coast of Boothia Peninsula supports relatively dense concentrations of ringed seals in June and early July (Finley 1976).

8 HRty HBty Ringed seals and the less common bearded seals range throughout the marine areas of this map section.(Fenco Consultants Ltd. 1978; Mansfield 1967).

THOM BAY - 57F



WLrs
HRrs
1 HBrs
Nrs
BWrs

Several species of marine mammals occur in Thom Bay during the summer. Small numbers of walruses and both ringed and bearded seals are seen regularly. Narwhals and beluga whales are seen occasionally. (Finley and Johnston 1977.)

2 Pdw

The areas around Thom Bay and north of Pasley Bay provide suitable habitat for polar bear denning in fall and winter (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979).

3 Prs

The northeast coast of Boothia Peninsula, especially north of Abernethy Bay, is an important summer area for polar bears (Fenco Consultants Ltd. 1978).

4 Pls

Polar bears concentrate on the ice edges off the coast of Boothia Peninsula in spring (Fenco Consultants Ltd. 1978). They breed during this period and hunt seals intensively.

5 HRls

Concentrations of ringed seals occur along the fast ice off the east coast of Boothia Peninsula in June and early July (Finley 1976).

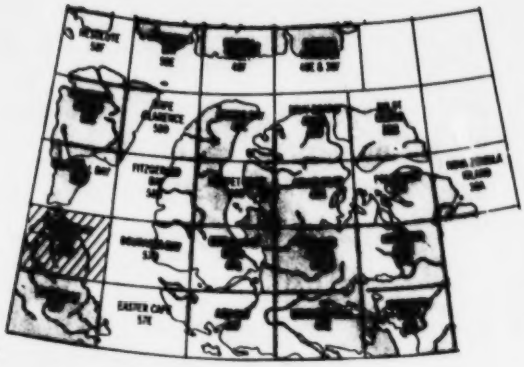
6 HRty
HBty

Ringed seals, and lesser numbers of bearded seals, occur throughout the marine areas of this map section (Fenco Consultants Ltd. 1978).

7 F

Arctic cod enter Thom Bay in August and remain until January when they disperse to deeper water. These fish are important food for Arctic char and many species of marine birds and mammals. Other species in the area are snailfishes and fourhorn sculpins. (Canadian Wildlife Service 1972; Dunbar 1947.)

BRENTFORD BAY - 57G



1 Pdw Certain portions of the west coast of Boothia Peninsula provide suitable habitat for polar bear maternity denning in fall and winter (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979).

2 Prs Northern Boothia Peninsula and the peninsula's east coast are areas of summer retreat for polar bears when coastal ice has disappeared (Fenco Consultants Ltd. 1978).

3 Pls Brentford Bay is a prime summer feeding area for polar bears. Numerous bears concentrate there to hunt seals on the ice that remains long into summer. The area may be particularly important to pregnant females, family groups and young bears (Stirling *et al.* 1979).

4 Pls In spring, polar bears concentrate on the ice off both coasts of Boothia Peninsula and in Wrottesley Inlet. The bears breed in spring, and they hunt seals intensively during this period (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979).

5 Prw Areas of ice and open water in northern Gulf of Boothia provide primary winter habitat for polar bears (Read and Stephansson 1976).

Nrs
6 BWrs There are hundreds of narwhals, belugas, and harp seals in
HHrs southern Peel Sound and Franklin Strait in summer. This map section includes part of the eastern extension of these concentrations (Finley and Johnston 1977).

7 Nrs BWrs HHrs HRrs HBrs — Narwhals, belugas, harp seals, and bearded seals summer in modest numbers in Bellot Strait. Ringed seals occur throughout Bellot Strait, but particularly large numbers frequent the western end of the strait. (Finley and Johnston 1977).

8 Nrs BWrs — Brentford Bay harbours small numbers of beluga whales and narwhals in August (Finley and Johnston 1977; Freeman 1976; Hay and Sergeant 1976; Thomson *et al.* 1978).

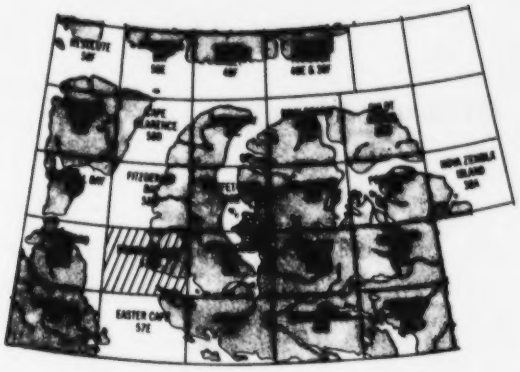
9 BWls — Babbage Bay has modest congregations of beluga whales in August, a time of summer feeding and nursing of calves (Finley 1976).

10 HRls — In late spring, many ringed seals are found on the fast ice in Brentford Bay, off the western entrance of Bellot Strait, and in another locality somewhat farther south along the west coast of Boothia Peninsula (Finley 1976).

11 HRty HBty — Ringed and bearded seals occur throughout the marine areas of this map section, particularly in coastal waters (Fenco Consultants Ltd. 1978; Mansfield 1967).

12 F — The Nudlukta Lake-Nudlukta Inlet system supports a population of anadromous Arctic char. Arctic cod are found in high densities in Brentford Bay. Several species of sculpins as well as fish doctors and eelpouts occur in Brentford Bay. Arctic cod and seasnails occur in eastern Bellot Strait. (Canadian Wildlife Service 1972; Dunbar 1947; National Museum of Canada, unpubl. data; Thomson *et al.* 1978.)

BOURASSA BAY - 57H



1 Prs — Polar bears frequent Bernier Bay in spring and summer (Bissett 1968a).

2 P^{rs}_{dw} — The west coast of Brodeur Peninsula provides suitable habitat for polar bear maternity denning in fall and winter. Bears probably use this area in summer as well, retreating to land as the coastal ice disappears. (Fenco Consultants Ltd. 1978; Freeman 1976; Harington 1963; Jonkel 1976; Stirling *et al.* 1979.)

3 Pdw — This is the northern edge of a polar bear maternity denning area in fall and winter (Fenco Consultants Ltd. 1978; Freeman 1976; Stirling *et al.* 1979).

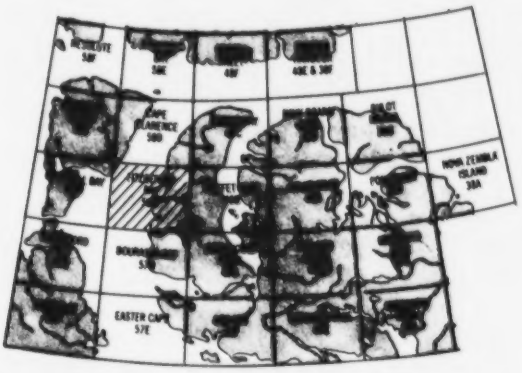
4 Pls — This is the eastern extension of a polar bear spring concentration area on the ice along the west side of the Gulf of Boothia. At this time, the bears hunt seals intensively and breed on the ice. (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979.)

5 Prw — This region of ice and open water is winter habitat for polar bears (Read and Stephansson 1976).

6 BWls — Beluga whales congregate at Cape Kater in summer, particularly in the estuary of the Kater River. The area may be a summer feeding ground. (Heyland 1975; Sergeant and Brodie 1975.)

7 $^{HRty}_{HBty}$ — Ringed seals and, in lesser numbers, bearded seals can be found dispersed throughout the marine areas of this map section (Fenco Consultants Ltd. 1978; Mansfield 1967).

FITZGERALD BAY - 58A



1 REs A few bowhead whales occur on the west side of Prince Regent Inlet during the summer (Finley 1976).

2 P^{rs}_{dw} The west coast of Brodeur Peninsula provides suitable habitat for polar bear maternity denning in fall and winter. It is also an area of summer retreat for the bears after coastal ice has disappeared and the hunting of seals is no longer possible. The interior of Brodeur Peninsula is used to an unknown degree by bears. (Fenco Consultants Ltd. 1978; Freeman 1976; Jonkel 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

3 Pls Prince Regent Inlet is a polar bear concentration area in spring. Bears breed, and hunt seals on the ice during this time. (Fenco Consultants Ltd. 1978; Bissett 1968a; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

4 Prs This is a small portion, on this map section, of southern Somerset Island, which provides summer retreat for polar bears when the disappearance of floe ice forces bears onto land (Fenco Consultants Ltd. 1978).

5 BWm^{s}_{w} Nm^{s}_{w} HHm^{s}_{w} REm^{s}_{w} Thousands of beluga whales travel down the coast of Somerset Island in July on their way to Creswell Bay, a major summer concentration and post-calving locale. Small numbers of narwhals and harp seals also travel this route, reaching Creswell Bay in late July and August. A few bowhead whales may move south along the coast of Somerset Island. The return migration of all these

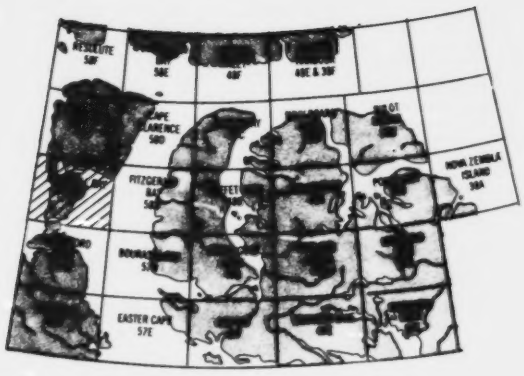
species occurs in September. (Finley 1976; Finley and Johnston 1977.)

6 Nm^{S}_{W} HHm^{S}_{W} Some narwhals and harp seals migrate south through Prince Regent Inlet in summer, and there is evidence that small numbers of the narwhals move into the Gulf of Boothia and Thom Bay (Finley and Johnston 1977; Freeman 1976).

7 BWls In summer, beluga whales concentrate in Fitzgerald Bay and in the estuary of an unnamed creek somewhat farther to the north. These may be prime summer feeding waters. (Finley and Johnston 1977; Heyland 1975.)

8 HRty HBty Ringed and bearded seals occur scattered throughout the marine areas included on this map section, particularly in coastal areas (Fenco Consultants Ltd. 1978; Mansfield 1967).

CRESWELL BAY - 58B



1 P^{rs}_{dw} The east and west coasts of Somerset Island provide areas of summer retreat for polar bears after coastal ice has disappeared. There also is habitat in these areas for maternity denning in fall and winter. (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979.)

2 Prs All of southern Somerset Island provides range for polar bears in summer (Fenco Consultants Ltd. 1978).

3 Pls This is the northern extension of a polar bear spring concentration area which extends southward along the west coast of Boothia Peninsula (Stirling *et al.* 1979).

4 Pls Polar bears concentrate on the ice in Prince Regent Inlet in the spring, when they breed and intensively hunt seals. Bears are reportedly numerous between Cape Garry and Fort Ross along Somerset Island's southeast coast. (Fenco Consultants Ltd. 1978; Harington 1963; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

BWm^{s}_{w}

5 Nm^{s}_{w}

HHm^{s}_{w}

Thousands of beluga whales and moderate numbers of narwhals move south along the east coast of Somerset Island and enter Creswell Bay in July and August. They return north again in early September. Small numbers of harp seals also follow this route. (Davis *et al.* 1978a; Finley 1976; Finley and Johnston 1977.)

6 BWls Creswell Bay is a major summering area for beluga whales. About 3,500 of these whales concentrate in the warm waters of the inner

bay and the Creswell River estuary during late July and August. They probably feed on Arctic cod while in the area. Usually they leave in early September. Creswell Bay is the most important area of coastal summer concentration for belugas of the Lancaster Sound population. The boundary of this area and of Cunningham Inlet, another important site where belugas gather (see Resolute, 58F), are shown on the map. (Davis *et al.* 1975; Finley 1976; Finley *et al.* 1974; Finley and Johnston 1977; Sergeant and Brodie 1975.)

7 Nrs HHrs — Small concentrations of narwhals and harp seals occur in Creswell Bay in August (Canadian Wildlife Service 1972; Finley 1976; Finley *et al.* 1974; Finley and Johnston 1977).

8 RErs — The bowhead whale is occasionally seen in small numbers along the east coast of Somerset Island and in Creswell Bay in the summer. Creswell Bay once supported a much larger population of these whales, and therefore it may be an important place for the recovery of this species. (Finley 1976.)

9 BWls — Large numbers of beluga whales are found along the east coast of Somerset Island between Cape Garry and Fort Ross in summer; the greatest concentrations are at Cape Garry and near the mouth of the Lang River. (Finley 1976; Finley *et al.* 1974; Finley and Johnston 1977.)

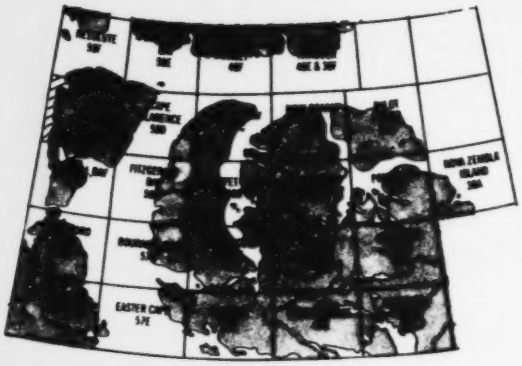
10 BWrs Nrs HBrs HHrs HRrs — Moderate numbers of belugas, narwhals, bearded seals and harp seals occur in Bellot Strait during the summer. Ringed seals are found throughout the strait, but large numbers occur mainly at the western end. (Finley and Johnston 1977.)

11 Nrs BWrs HHrs — Narwhals, belugas, and harp seals occur frequently in southern Peel Sound. It is a major summering area for large numbers of these animals. (Finley and Johnston 1977.)

12 HRty HBty Ringed and bearded seals are year-round residents in all the marine areas of this map section, and they may be encountered throughout the region (Fenco Consultants Ltd. 1978; Mansfield 1967).

13 F In late June or early July, anadromous Arctic char move from Stanwell-Fletcher Lake down the Union River into inner Creswell Bay. They return in late August or early September to overwinter in the lake. Large shoals of Arctic cod, a primary food item for many marine mammals, occur in late summer in inner Creswell Bay. Several species of sculpins occur in Creswell Bay, as well as polar cod, fish doctors, seasnails, and eelpouts. Arctic cod and fish doctors also occur at Fort Ross, on the eastern end of Bellot Strait. (de March *et al.* 1978; Dunbar 1947; Eddy and Lankester 1978; Finley and Johnston 1977; Fenco Consultants Ltd. 1978; National Museum of Canada, unpubl. data; Sekerak *et al.* 1976b.)

SOMERSET ISLAND - 58C



1 Pdw Polar bears den in this section of the west coast of Somerset Island in fall and winter (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979).

2 Prs Southern Somerset Island provides range for polar bears in summer (Fenco Consultants Ltd. 1978).

3 P^{rs}_{dw} Small numbers of polar bears den in fall and winter along northern portions of Somerset Island. The area also probably is summer range after coastal ice has disappeared and the bears are forced onto land. (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979.)

4 Pls The large polar bear population centered in Barrow Strait extends into Peel Sound. In spring the bears concentrate in the mouth of the sound, where they breed, and hunt seals on the ice. (Bissett 1968b; Fenco Consultants Ltd. 1978; Jonkel 1976.)

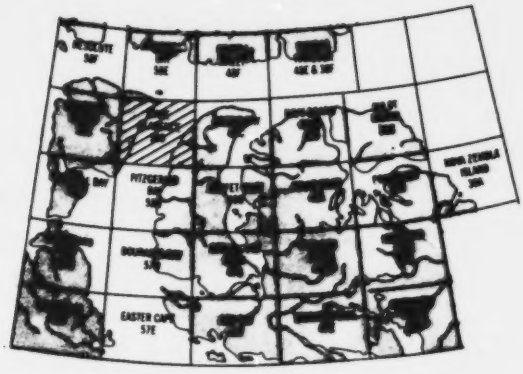
5 HRls In June and July, many ringed seals congregate in Aston Bay, where they haul out to moult on the fast ice that remains there. Large numbers of birth lairs under the snow also have been found in the area. Similar high densities of ringed seals occur at the mouth of Aston Bay and along the northwest coast of Somerset Island as far as Limestone Island. (Finley 1976; Finley *et al.* 1974; Smith *et al.* 1979.)

6 BWls Hundreds of beluga whales occasionally gather in Garnier Bay in the summer. This bay appears to be used by belugas that do not

have ready access to Cunningham Inlet. (Finley 1976; Finley and Johnston 1977; Sergeant and Brodie 1975.)

7 HRty HBty Ringed and bearded seals range throughout the marine areas of this map section (Fenco Consultants Ltd. 1978; Mansfield 1967).

CAPE CLARENCE - 58D



1 Pls Many polar bears inhabit Prince Regent Inlet in spring, breeding, and hunting seals on the ice. Particularly high densities of bears occur in the mouth of the inlet at the ice floe edge. The ice along the north coast of Somerset Island also has substantial numbers of bears in spring. (Jonkel 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

2 Prs This is the easternmost extension, on this map section, of a wide area of polar bear summer range on southern Somerset Island (Fenco Consultants Ltd. 1978).

3 P^{rs}_{dw} Polar bears den in fall and winter on northern Somerset Island and on western Brodeur Peninsula. These areas also provide suitable summer habitat for polar bears when ice has disappeared and they are forced onto land. (Fenco Consultants Ltd. 1978; Jonkel 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

4 BWls Approximately 900 beluga whales have been sighted in Elwin Bay during the summer. Feeding and calving may take place there. Belugas also concentrate in the area around Port Leopold in August. (Duvall and Handley 1946, 1948; Finley 1976; Finley *et al.* 1974; Finley and Johnston 1977; Heyland 1975; Sergeant and Brodie 1975.)

5 BWm^{s}_{w} Several thousand belugas migrate south into Prince Regent Inlet from Lancaster Sound in June and July, moving to summering and calving grounds, particularly in Creswell Bay (see Creswell

Bay, 58B). Large numbers can be seen along the coast of Somerset Island during this time. Before ice break-up, hundreds of belugas may congregate at the ice floe edge at the entrance to the inlet. In September, belugas return north to Lancaster Sound along the same route. (Hay and Sergeant 1976; Finley and Johnston 1977.)

Nm^{s}_{w}
6 HHm^{s}_{w}
REm^{s}_{w}

Small groups of narwhals move south into Prince Regent Inlet from Lancaster Sound in June and July, usually traveling offshore. Some head for Creswell Bay, while others continue on to southern Prince Regent Inlet and the Gulf of Boothia (see Easter Cape, 57E). Small numbers of harp seals also follow a similar route into Prince Regent Inlet later in summer. A few bowhead whales may travel through Prince Regent Inlet to Creswell Bay in summer. Return movement to the north and then eastward is in September. (Finley 1976; Finley and Johnston 1977; Hay and Sergeant 1976.)

7 RErs

A few bowhead whales occur in the waters off Cape Clarence in June (Finley 1976; Hay and Sergeant 1976).

8 HRty
HBty

Ringed seals and the less common bearded seals are distributed throughout the marine areas of this map section. Ringed seals are found in areas of fast ice, bearded seals in drifting pack ice. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

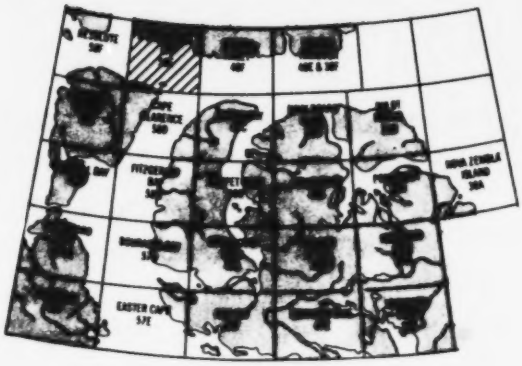
9 F

The Batty River system has a population of anadromous Arctic char. These fish descend to Batty Bay in early summer and return upriver later in the season. Spawning occurs in the fall (Sekerak and Graves 1975).

10

In the spring, the edge of the Lancaster Sound ice floe extends between Prince Leopold Island and Maxwell Bay, to the north of this map section. Moderate numbers of beluga whales, walruses, polar bears, ringed seals, and occasionally bowhead whales occur at this ice edge in eastern Barrow Strait in late spring.

MAXWELL BAY - 58E



1 Pls Polar bears are found in the spring on the ice along both coasts of Lancaster Sound and Barrow Strait. They are particularly abundant along the south coast of Devon Island. The bears hunt seals at ice edges and in unstable offshore ice in the spring, and they also breed during this time. (Jonkel 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

2 P^{rs}_{dw} Polar bears den in fall and winter on the south coast of Devon Island. This coast and its bays also provide summer range for the bears. Maxwell and Radstock bays are regular summer feeding areas; the bears hunt seals on the ice which persists longer in those bays than in Lancaster Sound. Radstock Bay, in particular, is an important area for female bears and family groups. (Fenco Consultants Ltd. 1978; Finley 1976; Jonkel 1976; Schweinsburg *et al.* 1977; Stirling 1974; Stirling *et al.* 1979.)

3 Pdw Polar bears den on Prince Leopold Island in fall and winter (Schweinsburg *et al.* 1977).

4 P^{rs}_{dw} The north coast of Somerset Island provides suitable habitat for polar bear denning in fall and winter, and for summer range during the period of minimum floe ice (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979).

5 BWm^{s}_{w} WLm^{s}_{w} Many beluga whales travel westward along the south coast of Devon Island in early July. Some remain in the bays of Devon Island's south coast to pass the summer, but most continue on either

southward into Prince Regent Inlet or southwestward towards the north coast of Somerset Island, heading for regular summering areas such as Creswell Bay or Cunningham Inlet. The return migration eastward is in September along the north side of Lancaster Sound, and it is rapid and intense. Walruses move westward in July, some remaining along the Devon Island coast and others continuing on into Barrow Strait farther west. (Davis and Finley 1979; Finley and Johnston 1977; Sergeant and Hay 1979.)

6 BWls Beluga whales are common in the summer along the south coast of Devon Island. During July, August and September, large numbers of belugas are sometimes seen in Erebus Bay, Radstock Bay, and Maxwell Bay. These may be important feeding areas. (Finley 1976; Finley and Johnston 1977; Heyland 1975; Jonkel 1976; Sergeant and Brodie 1975; Sergeant and Hay 1979.)

7 WLls Concentrations of walruses occur in Radstock Bay and Maxwell Bay during the summer. These appear to be important feeding areas. Walrus haul-out sites exist on beaches along the coast of southwest Devon Island. These sites are at Beechey Island, Cape Ricketts, Kearney Cove, Cape Hurd and Maxwell Bay. Usually less than 100 animals haul out at each site. (Davis *et al.* 1978b; Finley *et al.* 1974; Gunn 1949; Sergeant and Hay 1979.)

Nm^{s}_{w}
8 HHm^{s}_{w}
REm^{s}_{w} Narwhals and harp seals migrate west through this portion of Lancaster Sound in July, destined for Barrow Strait and summering grounds in Peel Sound. Small numbers of bowhead whales also travel this route in summer. The return migration eastward takes place in September and early October before freeze-up. (Davis *et al.* 1978a; Finley and Johnston 1977; Sergeant and Hay 1979.)

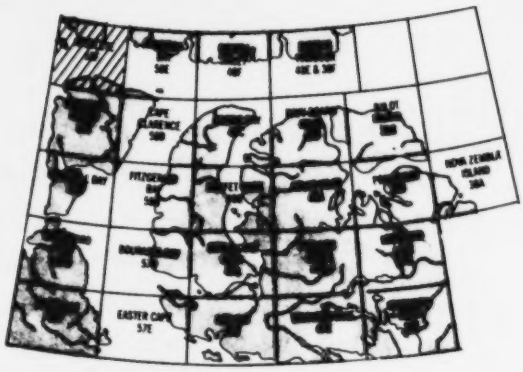
9 HHls There are small concentrations of harp seals in Maxwell Bay and Radstock Bay in August and September. These appear to be good feeding grounds. (Finley and Johnston 1977; Sergeant and Hay 1979.)

10 HRty HBty Ringed seals and bearded seals are year-round residents, and occur throughout Lancaster Sound and Barrow Strait. Ringed seals are found on fast ice, and the less common bearded seal in drifting pack ice. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

11 F Arctic cod occur in relatively high densities in Lancaster Sound, and are an important part of the diets of most arctic marine mammals. In the vicinity of Beechey Island, there are Arctic cod as well as fish doctors, eelpouts, sculpins and seasnails. (Bain *et al.* 1977; Sekerak *et al.* 1976a.)

12 In the spring, the edge of the Lancaster Sound ice floe extends between Prince Leopold Island and Maxwell Bay, approximately. Moderate numbers of beluga whales, walruses, polar bears, ringed seals and occasionally some bowhead whales occur at the ice edge in eastern Barrow Strait in late spring.

RESOLUTE - 58F



1 Pls In spring, polar bears are found concentrated on the ice along both margins of Barrow Strait. They breed on the ice and hunt seals at this time. The bears are numerous along the ice floe edges in the mouth of Wellington Channel. (Bradstreet and Finley 1977; Fenco Consultants Ltd. 1978; Freeman 1976; Schweinsburg *et al.* 1977; Stirling *et al.* 1979.)

2 P^{rs}_{dw} This is the westernmost edge of the southern Devon Island coastal region, which provides polar bear maternity denning habitat in fall and winter. It also is summer range for the bears when coastal ice has disappeared. (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979.)

3 P^{rs}_{dw} Polar bears den in fall and winter on the north coast of Somerset Island. The area also offers summer retreat when coastal ice has disappeared. (Fenco Consultants Ltd. 1978; Harington 1963; Stirling *et al.* 1979.)

4 Pdw This map section includes southeastern Cornwallis Island and Griffith Island, both of which support polar bear maternity denning in fall and winter. The headlands of bays, river valleys and banks are especially important for denning. (Fenco Consultants Ltd. 1978; Stirling *et al.* 1979.)

5 REmrs Bowhead whales occur in small numbers in the Barrow Strait area in the summer (Hay and Sergeant 1976; Mansfield 1971).

6 WLm^{S}_{W} In summer, walruses move from the east into the northern part of Barrow Strait, and proceed northwest to reach the Crozier Strait area to the west. They return along this route before freeze-up in the fall. (Davis *et al.* 1978a, 1978c.)

7 WLls Walruses occur in some numbers along the ice floe edge in Wellington Channel in June and July, particularly along the coasts of eastern Cornwallis Island and western Devon Island. Innes Point on southwestern Devon Island is a haul-out site for fewer than 100 walruses in summer when ice is dispersed. (Finley 1976; Finley *et al.* 1974; Bradstreet and Finley 1977.)

8 BWm^{S}_{W} In July, several thousand beluga whales move into southern Barrow Strait from Lancaster Sound to the east. They travel along the coast of northern Somerset Island, and some move southwest into Peel Sound in July and August. In September, before fall freeze-up, some return eastward through Barrow Strait along this route. Others return eastward along the south coasts of Cornwallis and Devon Islands. (Davis and Finley 1979; Finley 1976; Finley and Johnston 1977.)

9 BWls In summer, belugas concentrate in large numbers in the bays on the north coast of Somerset Island. During July and August, an estimated 2,000 belugas gather near the river mouth at the head of Cunningham Inlet. The boundary of this area and of Creswell Bay, perhaps the most important site where belugas of the Lancaster Sound population gather (see Creswell Bay, 58B), are indicated on the map. The function of such traditional summer congregation areas is not yet fully understood. In September, large numbers of belugas occur regularly in Allen Bay and Resolute Bay on the south coast of Cornwallis Island during their fall eastward migration. Along the migration route, they feed on Arctic cod in the coastal bays. (Bissett 1968b; Finley 1976; Finley *et al.* 1974; Finley and Johnston 1977; Freeman 1976;

Heyland 1975; Sergeant and Brodie 1975.)

10 Nm^{S}_{W} HHm^{S}_{W} An estimated 1,000 narwhals enter Barrow Strait during July from Lancaster Sound to the east. They move southwestward through the strait into Peel Sound, an important summering area. Harp seals also travel this route into Peel Sound later in the summer. Both species return east in September along a similar route, although it is possible that some animals move between Peel Sound and Prince Regent Inlet via Bellot Strait. (Finley 1976; Finley and Johnston 1977.)

11 HHm^{S}_{W} Harp seals arrive in Barrow Strait in late July and August. Some migrate north into Wellington Channel. They return south into Barrow Strait in late August and September, and then move east into Lancaster Sound. (Bissett 1968b; Finley and Johnston 1977.)

12 HRty HBty Ringed seals are common in Barrow Strait and occur on fast ice. The larger bearded seals are found in moving pack ice, and are less common than ringed seals. Both are year-round residents. (Fenco Consultants Ltd. 1978; Mansfield 1967.)

13 F Large concentrations of Arctic cod occur in summer and early fall in Allen, Resolute and Assistance bays on the south coast of Cornwallis Island. Arctic cod is an important component in the diets of most marine mammals in the Arctic, and it may determine to some extent the distribution of these animals. Cod are also found in Wellington Channel, in Resolute Passage, in Barrow Strait off the coast of Cornwallis Island, and in Cunningham Inlet on the north coast of Somerset Island. Other fish species in the Barrow Strait area include sculpins, eelpouts, fish doctors, seasnails, sticklebacks, and lumpsuckers. (Bain *et al.* 1977; Bain and Sekerak 1978; Finley and Johnston 1977; Green and Steele 1975; Holeton 1974; National Museum of Canada, unpubl. data; G. Sleno, pers. comm.; Turnbull 1974.)

BIBLIOGRAPHY

Alliston, W.G. 1976. A summary of research on birds, marine mammals and marine ecology in the Districts of Franklin and Keewatin, N.W.T., 1974 and 1975. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 90 p.

Anders, G. 1965. Northern Foxe Basin: an area economic survey, 1965. (A.E.S.R. 65/2). Industrial Division, Northern Administration Branch, Dept. of Northern Affairs and National Resources, 139 p.

Bain, H., D. Thomson, M. Foy, and W. Griffiths. 1977. Marine ecology of fast ice edges in Wellington Channel and Resolute Passage, N.W.T. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 262 p.

Bain, H. and A.D. Sekerak. 1978. Aspects of the biology of Arctic cod (*Boreogadus saida*) in the central Canadian Arctic. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 104 p.

Banfield, A.W.F. 1955. Ice reconnaissance flights, 1955. Canadian Wildlife Service, manuscript, 3 p.

1974. *The Mammals of Canada.* National Museums of Canada, University of Toronto Press, Toronto, 438 p.

B.C. Research. 1975. Baseline survey of the marine environment at Strathcona Sound, N.W.T. Progress Report No.1. Project 1552. Unpublished report, prepared for Strathcona Mineral Services by B.C. Research, 84 p.

Beaubier, P.H. 1970. The hunting pattern of the Igluligmiut, with emphasis on marine mammals. M.A. thesis, Dept. of Geography, McGill University, Montreal, 248 p.

Beaubier, P.H., M.J. Bradley, and J.G. Vestey. 1970. Human ecological studies, Igloolik, N.W.T. Final report submitted to International Biological Program, Human Adaptability Project, 180 p.

Beck, B. and A.W. Mansfield. 1969. Observations on the Greenland shark (*Somniosus microcephalus*) in northern Baffin Island. *J. Fish. Res. Board Can.* 26(1): 143-145.

Bissett, D. 1968a. Northern Baffin Island: an area economic survey, 1967. (A.E.S.R. 67/1). Industrial Division, Northern Administration Branch, Dept. of Indian and Northern Affairs, Ottawa, 209 p., 131 p. (2 vols.).

1968b. Resolute: an area economic survey, 1967. (Vol.2 of the Lancaster Sound survey). (A.E.S.R. 67/1). Industrial Division, Northern Administration Branch, Dept. of Indian and Northern Affairs, Ottawa, 175 p.

Bohn, A. and R.O. McElroy. 1976. Trace metals (As, Cd, Cu, Fe, and Zn) in Arctic cod (*Boreogadus saida*) and selected zooplankton from Strathcona Sound, northern Baffin Island. *J. Fish. Res. Board Can.* 33: 2836-2840.

Bohn, A. and B.W. Fallis. 1978. Metal concentrations (As, Cd, Cu, Pb, and Zn) in shorthorn sculpins (*Myoxocephalus scorpius*) and Arctic char (*Salvelinus alpinus*) from the vicinity of Strathcona Sound, N.W.T. *Water Research* 12: 659-663.

Boreal Institute for Northern Studies. 1975. Canadian Arctic Renewable Resources Mapping Project. Vol.2. Inuit Tapirisat of Canada. University of Alberta, Edmonton, 238 p. with map volume.

Boyd, D.H., R.K. Schmidt, W. Hayden, and I.W. Dickson. 1978. Possible effects of the proposed Polar Gas Pipeline Project on living resource use in the eastern Arctic. AIPP Preliminary Report 1977. ESCOM Report No.AI-02. Environmental-Social Program, Northern Pipelines. Dept. of Indian and Northern Affairs, Ottawa, 238 p.

Bradley, M. 1970. Ringed seal avoidance behavior in response to Eskimo hunting in northern Foxe Basin. M.Sc. thesis, Dept. of Geography, McGill University, Montreal, 113 p.

Bradstreet, M.S.W. and K.J. Finley. 1977. Distribution of birds and marine mammals along fast ice edges in Barrow Strait, N.W.T. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 315 p.

Bruemmer, F. 1966a. Arctic unicorn. *Animals* 8(7): 174-177.

1966b. Narwhal, the sea unicorn. *Beaver* 296: 30-37.

1969a. The sleepy sharks of the Arctic. *North* 16(1): 40-43.

1969b. The Sea Unicorn. *Audubon* 71(6): 58-63.

1972. *Encounters with Arctic Animals.* McGraw-Hill Ryerson Ltd., Toronto, 254 p.

Buchanan, R.A. and W.E. Renaud. 1978. The marine ecology of Lancaster Sound and adjacent waters: an annotated bibliography. Environmental Studies 7. North of 60. Indian and Northern Affairs Canada, Ottawa, 262 p.

Canada. 1966. *Atlas of the Northwest Territories, Canada.* Vol.1: text, 155 p.; Vol.2: 47 maps. Advisory Commission on the Development of Government in the Northwest Territories, Ottawa.

Canada. 1973. *The National Atlas of Canada.* Fourth ed. Map 169: Fisheries, selected characteristics. Dept. of Energy, Mines and Resources, Ottawa.

Canadian Wildlife Service. 1966. CWS brief. In: Proceedings of the First International Scientific Meeting on Polar Bear, p. 9-15, University of Alaska, Fairbanks, 6-10 September 1965. Published by U.S. Dept. of the Interior, Bureau of Sport Fisheries and Wildlife (Resource Publ. 16), and the University of Alaska (International Conference Proceedings Series No.1).

Canadian Wildlife Service. 1972. *Arctic Ecology Map Series.* Environment Canada, Ottawa, 324 p. and maps.

Couvillion, K.E. and D.E. McAllister. 1979. Bibliography of the marine fishes of Arctic Canada, 1771-1978. Manuscript, 52 p.

Crowe, K.J. 1970. A cultural geography of northern Foxe Basin, N.W.T. Northern Science Research Group, Dept. of Indian and Northern Affairs, Ottawa, 130 p.

Davis, R.A., K.J. Finley, M. Bradstreet, C. Holdsworth, and M. McLaren. 1975. Studies of the numbers and distribution of birds and marine mammals in the central Canadian Arctic, 1974, a supplement. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 205 p.

Davis, R.A., K.J. Finley, and W.J. Richardson. 1978a. The present status and future management of Arctic marine mammals in Canada. Draft, prepared for the Science Advisory Board of the Northwest Territories, Yellowknife, by LGL Ltd., Toronto, 222 p.

Davis, R.A., W.R. Koski, and K.J. Finley. 1978b. Numbers and distribution of walruses in the central Canadian High Arctic. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 50 p.

Davis, R.A., W.J. Richardson, S.R. Johnson, and W.E. Renaud. 1978c. Status of the Lancaster Sound narwhal population in 1976. SC/29/Doc. 22. Twenty-eighth Report, International Whaling Commission, p. 209-215.

Davis, R.A. and K.J. Finley. 1979. Distribution, migrations, abundance and stock identity of eastern Arctic white whales. Manuscript, prepared for the Meeting of the Subcommittee on Small Cetaceans, International Whaling Commission, June, 1979, 36 p.

Degerbøl, M. and P. Freuchen. 1935. Mammals: report of the Fifth Thule Expedition, 1921-1924, 2(4-5): 278 p.

de March, L., B. de March, and W. Eddy. 1978. Limnological, fisheries and stream zoobenthic studies at Stanwell-Fletcher Lake, a large High Arctic lake. AIPP preliminary report 1977. ESCOM Report No.AI-04. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 84 p.

Dunbar, M.J. 1947. Marine young fish from the Canadian Eastern Arctic. Fisheries Research Board of Canada, Bulletin 73: 1-11.

Dunbar, M.J. and D.M. Moore. 1978. Marine life and its environment in the Canadian eastern Arctic: a biogeographic study. Unpublished report, Marine Sciences Centre, McGill University, Montreal, 119 p.

Duvall, A.J. and C.O. Handley. 1946. Report of a wildlife reconnaissance of the eastern Canadian Arctic. Special report, U.S. Dept. of the Interior, Fish and Wildlife Service, manuscript, 138 p. (Also: Canadian Wildlife Service, Report 239, 138 p.)

1948. Second wildlife reconnaissance of the eastern Canadian Arctic. Special report, U.S. Dept. of the Interior, Fish and Wildlife Service, manuscript, 168 p. (Also: Canadian Wildlife Service, Report 9, 168 p.)

Eddy, S.B. and M.W. Lankester. 1978. Feeding and migratory habits of Arctic char (*Salvelinus alpinus*) indicated by the presence of the swim-bladder nematode (*Cystidicola cristivomeri*). *J. Fish. Res. Board Can.* 35(11): 1488-1491.

Ellis, D.V. 1957. Some observations on mammals in the area between Coppermine and Pond Inlet, N.W.T., during 1954 and 1955. *Can. Field Nat.* 71(1): 1-6.

1962. Observations on the distribution and ecology of some arctic fish. *Arctic* 15(3): 179-189).

Fenco Consultants Ltd. 1978. An Arctic Atlas: background information for developing marine oilspill counter-measures. Arctic Marine Oilspill Program Report EPS-9-EC-78-1. Fenco Consultants Ltd. and F.F. Slaney and Co., Calgary. Fisheries and Environment Canada, Ottawa.

Ferguson, D. 1974. Koluktoo, anglers' delight. *Arctic in Colour* 3(2): 30-36.

F.F. Slaney and Co. Ltd. 1974. Preliminary environmental impact assessment of the proposed Lancaster Sound offshore drilling operations. Unpublished report, prepared for Norlands Petroleum Ltd. by F.F. Slaney and Co., 52 p.

Finley, K.J. 1976. Studies of the status of marine mammals in the central District of Franklin, N.W.T., June-August, 1975. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 183 p.

1978. Behaviour and densities of ringed seals (*Phoca hispida*) during haul-out in the High Arctic, June 1977. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 107 p.

1979. Haul-out behaviour and densities of ringed seals (*Phoca hispida*) in the Barrow Strait area, N.W.T. *Can. J. Zool.* 57(10): 1985-1997.

Finley, K.J., R.A. Davis, and W.J. Richardson. 1974. Preliminary studies of the numbers and distribution of marine mammals in the central Canadian Arctic, 1974. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 68 p.

Finley, K.J. and W.G. Johnston. 1977. An investigation of the distribution of marine mammals in the vicinity of Somerset Island with emphasis on Bellot Strait, August-September 1976. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 91 p.

Finley, K.J., R.A. Davis, and H.B. Silverman. 1979. Aspects of the narwhal hunt in the eastern Canadian Arctic. Revised version of SC/31/Doc.Sm9 presented to the Scientific Committee, International Whaling Commission, June 1979, 18 p.

Ford, J.K.B. and H.D. Fisher. 1978. Underwater acoustic signals of the narwhal (*Monodon monoceros*). *Can. J. Zool.* 56(4): 552-560.

Freeman, M.M.R. 1968. Winter observations on beluga (*Delphinapterus leucas*) in Jones Sound, N.W.T. *Can. Field Nat.* 82(4): 276-286.

(ed.) 1976. Inuit Land Use and Occupancy Project. Vol.1: Land use and occupancy, 263 p.; Vol.2: Supporting studies, 287 p.; Vol.3: Land use atlas, 153 maps. Prepared by Milton Freeman Research Ltd., Dept. of Indian and Northern Affairs, Ottawa.

Freuchen, P. and F. Salomonsen. 1958. *The Arctic Year*. G.P. Putnam's Sons, New York, 438 p.

Green, J.M. and D.H. Steele. 1975. Observations on marine life beneath sea ice, Resolute Bay, N.W.T. In: Proceedings of Circumpolar Conference on Northern Ecology, September 15-18, 1975, Ottawa. National Research Council of Canada.

Greendale, R.G. and C. Brousseau-Greendale. 1976. Observations of marine mammals in migration at Cape Hay, Bylot Island, during the summer of 1976. Environment Canada, Fisheries and Marine Service, Technical Report No.680, 25 p.

Gunn, W.W.H. 1949. Report of wildlife observations by a Dominion Wildlife Service observer accompanying the Arctic Weather Station Re-supply Mission, U.S. Navy Operation 49.8, July 15 to September 7, 1949. Dept. of Mines and Resources, manuscript, 54 p.

Harington, C.R. 1963. Polar bear study, Resolute Bay area, N.W.T., 1962. Canadian Wildlife Service, unpublished report, 38 p.

1964. Polar bears and their present status. *Canadian Audubon* 26(1): 4-11.

1966. Extralimital occurences of walruses in the Canadian Arctic. *J. Mamm.* 47: 506-513.

1968. Denning habits of the polar bear (*Ursus maritimus*). Canadian Wildlife Service, Report Series No.5, 30 p.

Hatfield, C.T. and G.L. Williams. 1976. Summary of possible environmental effects of disposing mine tailings into Strathcona Sound, Baffin Island. North of 60. ALUR 75-76-38. Indian and Northern Affairs, Ottawa, 76 p.

Hay, K. 1976. Preliminary report on narwhal studies in northern Baffin Island, summer 1976. Fisheries Research Board of Canada, manuscript report, 9 p.

1979. Population biology of the narwhal (*Monodon monoceros*) in the eastern Canadian Arctic. Ph.D. thesis in preparation, McGill University, Montreal.

Hay, K. and R. McClung. 1976. Observations on beluga and narwhal in the Canadian High Arctic, summer 1974. Fisheries Research Board of Canada, Manuscript Report Series No.1385, 55 p.

Hay, K. and D.E. Sergeant. 1976. Interim Technical Report, Arctic Whale Project. Environmental-Social Program, Northern Pipelines (Arctic Islands Pipeline), manuscript, 41 p.

Herlinveaux, R.H. 1970. Icepack 8/68: oceanographic and biological observations. Fisheries Research Board of Canada, Technical Report No.159, 60 p.

Heyland, J.D. 1975. Aspects of the biology of beluga (*Delphinapterus leucas*) interpreted from vertical aerial photographs. In: Proceedings of Second Canadian Symposium on Remote Sensing, p. 373-390, University of Guelph, Ontario, April 29-May 1, 1974.

Heyland, J.D. and K. Hay. 1976. An attack by a polar bear on a juvenile beluga. *Arctic* 29(1): 56-57.

Hildebrand, H. 1948. Marine fish of Arctic Canada. M.Sc. thesis, McGill University, Montreal, 123 p.

Holeton, G.F. 1974. Metabolic cold adaptation of polar fish: fact or artefact? *Physiol. Zool.* 47(3): 137-152.

Johnson, S.R., W.E. Renaud, R.A. Davis, and W.J. Richardson. 1976. Marine mammals recorded during aerial surveys of birds in eastern Lancaster Sound, 1976. Unpublished report, prepared for Norlands Petroleum Ltd., Calgary, by LGL Ltd., Toronto, 180 p.

Jonkel, C. 1976. Lancaster Sound: Admiralty Inlet polar bear studies. Strathcona Sound Project. Canadian Wildlife Service, 22 p.

Jonkel, C., I. Stirling, G. Kolenosky, S. Miller, and R. Robertson. 1976. Polar bear research in Canada, 1972-1974. In: Polar Bears, Proceedings of Fifth Working Meeting of Polar Bear Specialist Group, 3-5 December 1974, St. Prex, Switzerland. IUCN Publications New Series, Supplementary Paper No.42, p. 23-36.

Kemper, B. (ed.) 1976. Environmental Baseline Studies, 1975, Strathcona Sound Project. Preliminary report. Canadian Wildlife Service, 96 p.

Kiliaan, H.P.L. and I. Stirling. 1978. Observations on over-wintering walruses in the eastern Canadian High Arctic. *J. Mamm.* 59(1): 197-200.

Kiliaan, H.P.L., I. Stirling, and C. Jonkel. 1978. Polar bears in the area of Jones Sound and Norwegian Bay. Canadian Wildlife Service, Progress Notes No.88, 21 p.

Lalli, C.M., R. Buchanan, D. Thomson, and F. Wells, Jr. 1973. Polar Gas preliminary environmental study: marine ecology report. Unpublished report, Marine Sciences Centre, McGill University, Montreal, 98 p.

Land, E.M. 1977. The Narwhal and the Walrus: a Problem of Ivory. In: T. Mosquin and C. Suchal (eds.), *Canada's Threatened Species and Habitats*, Proceedings of Symposium on Canada's Threatened Species and Habitats, Ottawa, 20-24 May 1976. Canadian Nature Federation, Ottawa, Special Publication No.6, p. 79-81.

Lange, K.I. 1959. Biological observations and general comments on Cornwallis Island, N.W.T. *J. Ariz. Acad. Sci.* 1: 72-75.

Lawrie, A. 1950. Field report of a biological reconnaissance of the eastern Canadian Arctic Archipelago, July-September 1950. Canadian Wildlife Service, Dept. of Resources and Development, manuscript, 32 p.

Loughrey, A.G. 1952. Wildlife observations. Ice reconnaissance flight, 1952. Canadian Wildlife Service, manuscript, 11 p.

1959. Preliminary investigation of Atlantic walrus (*Odobenus rosmarus rosmarus*). Canadian Wildlife Service, Dept. of Northern Affairs and National Resources, Wildlife Management Bulletin, Series 1, No.14, 123 p.

MacInnis, J.B. 1976. Whale song: in search of the narwhal. *Can. Geog. J.* 92(3): 4-11.

Macpherson, A.H. 1959. A preliminary survey of Arctic wildlife resources. Canadian Wildlife Service, manuscript, 51 p.

Mair, W.W. 1954. Summary report on data obtained during northern inspection flight, 3-22 April 1954. Canadian Wildlife Service, manuscript.

Mansfield, A.W. 1959. The walrus in the Canadian Arctic. Fisheries Research Board of Canada, Arctic Unit, Circular No.2, 13 p.

1966. The walrus in Canada's Arctic. *Can. Geog. J.* 72(3): 88-95.

1967. Seals of Arctic and eastern Canada. Fisheries Research Board of Canada, Bulletin No.137 (2nd ed.), 35 p.

1970. Population dynamics and exploitation of some Arctic seals. In: M.W. Holdgate (ed.), *Antarctic Ecology*, Vol.1, p. 429-446. Academic Press, London and New York.

1971. Occurrence of the bowhead or Greenland right whale (*Balaena mysticetus*) in Canadian Arctic waters. *J. Fish. Res. Board Can.* 28(12): 1873-1875.

1973. The Atlantic walrus (*Odobenus rosmarus rosmarus*) in Canada and Greenland. In: Seals, Proceedings of Working Meeting of Seal Specialists on Threatened and Depleted Seals of the World, University of Guelph, 18-19 August 1972. IUCN Publications New Series, Supplementary Paper No.39, p. 69-79.

1975. Marine ecology in Arctic Canada. In: Proceedings of the Circumpolar Conference on Northern Ecology, 15-18 September 1975, Ottawa. National Research Council of Canada.

Mansfield, A.W., D.E. Sergeant, and T.G. Smith. 1975a. Marine Mammal Research in the Canadian Arctic. Environment, Fisheries and Marine Service, Technical Report No.507, 23 p.

Mansfield, A.W., T.G. Smith, and B. Beck. 1975b. The narwhal (*Monodon monoceros*) in eastern Canadian Arctic waters. *J. Fish. Res. Board Can.* 32(7): 1041-1046.

Mary-Rousselière, G. 1959. Shark fishing at Pond Inlet. *Eskimo* (published by the Oblate Fathers of Hudson Bay Vicariate, Churchill, Manitoba) 52: 10-13.

McAllister, D.E. 1966. Bibliography of the marine fishes of Arctic Canada. National Museum of Canada, Museum Contribution No.8, 16 p.

McLaren, I.A. 1958. The economics of seals in the eastern Canadian Arctic. Fisheries Research Board of Canada, Circular No.1, 94 p.

Miller, R.S. 1955. A survey of the mammals of Bylot Island, N.W.T. *Arctic* 8(3): 167-176.

Milne, A.R. 1974. Use of artificial sub-ice air pockets by ringed seals (*Phoca hispida*). *Can. J. Zool.* 52: 1092-1093.

Milne, A.R. and B.D. Smiley. 1978. Offshore drilling in Lancaster Sound: possible environmental hazards. Institute of Ocean Sciences, Dept. of Fisheries and Environment, Sidney, B.C., 95 p.

Mitchell, E.D., M. McLaughlin, and A. Filion. 1979. Migration of bowhead whales (*Balaena mysticetus*) in eastern Canadian Arctic waters. In: Abstracts of Third Biennial Conference of Biology of Marine Mammals, p. 40, October 7-11, 1979, Seattle.

Nettleship, D.N. and P.A. Smith (eds.) 1975. Ecological sites in northern Canada. Canadian Committee for the International Biological Programme, Conservation Terrestrial Panel 9, Ottawa, 330 p.

Newman, M.A. 1970. Hunting narwhals (*Monodon monoceros*) for the aquarium. *International Zoo Yearbook* 10: 154-155. Published by the Zoological Society of London.

1971a. Capturing narwhals for the Vancouver Public Aquarium, 1970. *Polar Record* 15: 922.

1971b. Narwhals: sea-going unicorns of the North. In: A. Seed (compiler), *Toothed whales in eastern North Pacific and Arctic waters*, p. 34-39. Pacific Search Books, Seattle.

Peterson, E.B. 1978. Possible environmental disruptions from an Arctic Islands gas pipeline. AIPP Preliminary Report 1977. ESCOM Report No. AI-10. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 33 + 29 p.

Peterson, N.M. 1974a. Ecology of the Canadian Arctic Archipelago: selected references. Vol.1. Dept. of Indian and Northern Affairs, Ottawa, 425 p.

1974b. Ibid. Vol.2, p. 426-846.

1975. Ibid. Vol.3, p. 847-1304.

1976. Ibid. Vol.4, p. 1305-1790.

1978. Ibid. Vol.5, p. 1791-2277.

Peterson, R.L. 1966. *The Mammals of Eastern Canada.* Oxford University Press, Toronto, 465 p.

Read, C.J. and S.E. Stephansson. 1976. Distribution and migration routes of marine mammals in the central Arctic region. Dept. of the Environment, Fisheries and Marine Service, Technical Report No.667, 13 p.

Reeves, R. 1976a. Narwhals: another endangered species. *Can. Geog. J.* 92(3): 12-19.

1976b. What fate for the narwhal? *North/Nord* 23(3): 16-21.

1977a. Bowhead whales: marine giants in our Arctic. *Can. Geog. J.* 93(3): 38-45.

1977b. The walrus: not exactly thriving. *North/Nord* 24(4): 2-5.

1978a. The narwhal: one of northern Canada's wonders. *Arctic in Colour* 6(1): 35-43.

1978b. Atlantic walrus (*Odobenus rosmarus rosmarus*): a literature survey and status report. U.S. Dept. of the Interior, Fish and Wildlife Service, Wildlife Research Report 10, 41 p.

Renewable Resources Consulting Services Ltd. 1977. Aerial surveys of marine mammals of Lancaster Sound, 1975-1976. Unpublished report, prepared by Renewable Resources Consulting Services for Norlands Petroleum Ltd., 100 p.

R. Webb Environmental Services Ltd. 1976. Sea mammal surveys in Baffin Bay and Davis Strait, September 1976. Unpublished report, prepared for Shell Canada Resources Ltd., Calgary, by R. Webb Environmental Services, Richmond, B.C., 34 p.

Scherman, K. 1956. *Spring on an Arctic Island.* Little, Brown and Company, Boston, 331 p.

Scherman, K. and R.S. Miller. 1955. Creatures of sea ice and tundra barrens. *Animal Kingdom* 58: 56-61.

Schweinsburg, R.E. 1976. Polar bears: research in and around Admiralty Inlet, July-August 1975. In: B. Kemper (ed.), Environmental Baseline Studies, 1975, Strathcona Sound Project, p. 19-61. Preliminary report. Canadian Wildlife Service.

1979. Summer snow dens used by polar bears in the Canadian High Arctic. *Arctic* 32(2): 165-169.

Schweinsburg, R.E., I. Stirling, S. Oosenbrug, and H. Kiliaan. 1977. A status report on polar bear studies in Lancaster Sound, Part I. Report to Norlands Petroleum Ltd., Northwest Territories Fish and Wildlife Service, 55 p.

Sefton, J. and G. Miller. 1978. The Arctic Islands pipeline route: a bibliography of unpublished Fisheries and Environment Canada reports. AIPP Preliminary Report 1977. ESCOM Report No. AI-12. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 154 p.

Sekerak, A.D. and F.F. Graves. 1975. Investigation of aquatic resources along the proposed Polar Gas pipeline routes north of Spence Bay, N.W.T., 1974. Vol.1. Unpublished report, prepared for Polar Gas by Aquatic Environments Ltd., 186 p.

Sekerak, A.D., R.A. Buchanan, W.B. Griffiths, and M.G. Foy. 1976a. Biological oceanographic studies in Lancaster Sound, 1976. Unpublished report, prepared for Norlands Petroleum Ltd., Calgary, by LGL Ltd., Toronto, 169 p.

Sekerak, A.D., D. Thomson, H. Bain, and J. Acreman. 1976b. Summer surveys of the marine ecology of Creswell Bay, Somerset Island, and Assistance Bay, Cornwallis Island, N.W.T., 1975. Unpublished report, prepared for Polar Gas Project, Toronto, by LGL Ltd., Toronto, 215 p.

Sekerak, A.D. and W.J. Richardson. 1978. Studies of the ecology of fast ice edges in the High Arctic. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 92 p.

Sergeant, D.E. 1962. The biology and hunting of beluga or white whales in the Canadian Arctic. Fisheries Research Board of Canada, Arctic Unit, Circular No.8, 13 p.

1965. Migrations of harp seals (*Pagophilus groenlandicus*) in the northwest Atlantic. *J. Fish. Res. Board Can.* 22(2): 433-464.

1973. Feeding, growth, and productivity of northwest Atlantic harp seals (*Pagophilus groenlandicus*). *J. Fish. Res. Board Can.* 30(1): 17-29.

Sergeant, D.E. and P.F. Brodie. 1975. Identity, abundance, and present status of populations of white whales (*Delphinapterus leucas*) in North America. *J. Fish. Res. Board Can.* 32(7): 1047-1054.

Sergeant, D.E. and K. Hay. 1978. Observations on the distribution and abundance of sea mammals, particularly the narwhal, in northern Baffin Island. AIPP Preliminary Report 1977. ESCOM Report No. AI-13. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 6 p.

Sergeant, D.E. and K. Hay. 1979. Migratory sea mammal populations in Lancaster Sound. AIPP Report 1978. ESCOM Report No. AI-21. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 31 p.

Silverman, H.B. 1979. Social organization and behaviour of the narwhal (*Monodon monoceros*) in Lancaster Sound, Pond Inlet, and Tremblay Sound, N.W.T. M.Sc. thesis, Marine Sciences Centre, McGill University, Montreal, 147 p.

Smith, L. 1969. A narwhal captured! *North* 16(2): 30-33.

Smith, T.G., D. Taylor, and Hahgagiak. 1976. Breeding habitat and population surveys of seals in the Viscount Melville Sound, Barrow Strait and Peel Sound areas. Interim report to the Arctic Islands Pipeline Program, 30 p.

Smith, T.G. and D. Taylor. 1977. Notes on marine mammal, fox, and polar bear harvests in the Northwest Territories, 1940 to 1972. Dept. of the Environment, Fisheries and Marine Service, Technical Report No.694, 37 p.

Smith, T.G. and F.A.J. Armstrong. 1978. Mercury and selenium in ringed and bearded seal tissues from Arctic Canada. *Arctic* 31(2): 75-84.

Smith, T.G., B. Beck, and J. Memogana. 1978. Ringed seal breeding habitat surveys in the Viscount Melville Sound, Barrow Strait and Peel Sound areas. AIPP Preliminary Report 1977. ESCOM Report No. AI-14. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 19 p.

Smith, T.G., K. Hay, D. Taylor, and R. Greendale. 1979. Ringed seal breeding habitat in Viscount Melville Sound, Barrow Strait and Peel Sound areas. AIPP Report 1978. ESCOM Report No. AI-22. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 85 p.

Solman, V.E.F. 1954. Wildlife reconnaissance, Arctic Islands, July 1954. Canadian Wildlife Service, manuscript, 7 p.

Stepney, P.H.R. and R.L. Wooley. n.d. Survey of marine mammals of Lancaster Sound, October 1975. Unpublished report, prepared for Norlands Petroleum Ltd. by Renewable Resources Consulting Services Ltd., 55 p.

Stirling, I. 1974. Midsummer observations on the behaviour of wild polar bears (*Ursus maritimus*). *Can. J. Zool.* 52(9): 1191-1198.

Stirling, I., R.E. Schweinsburg, and H.P.L. Kiliaan. 1976. Polar bear research along the proposed Arctic Islands gas pipeline route. Progress report to Environmental Management Service, Dept. of Environment, Edmonton, 32 p.

Stirling, I. and P.B. Latour. 1978. Comparative hunting abilities of polar bear cubs of different ages. *Can. J. Zool.* 56(8): 1768-1772.

Stirling, I., R.E. Schweinsburg, W. Calvert, and H.P.L. Kiliaan. 1978. Population ecology of polar bear along the proposed Arctic Islands gas pipeline route. AIPP Preliminary Report 1977. ESCOM Report No. AI-15. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 71 p.

1979. Population ecology of polar bear along the proposed Arctic Islands gas pipeline route. AIPP Report 1978. ESCOM Report No. AI-24. Environmental-Social Program, Northern Pipelines. Indian and Northern Affairs, Ottawa, 93 p.

Templeman, W. 1963. Distribution of sharks in the Canadian Atlantic (with special reference to Newfoundland waters). Fisheries Research Board of Canada, Bulletin 140, 77 p.

Tener, J.S. 1963. Queen Elizabeth Islands Game Survey, 1961. Canadian Wildlife Service, Occasional Paper No. 4, 50 p.

Thomson, D., W.E. Cross, H. Bain, and L. Patterson. 1978. Aspects of the spring and summer marine environment of Brentford Bay, Boothia Peninsula, N.W.T. Unpublished report, prepared for Polar Gas Project by LGL Ltd., Toronto, 203 p.

Thorsteinsson, R. 1958. Cornwallis and Little Cornwallis Islands, District of Franklin, N.W.T. Dept. of Mines and Technical Surveys, Geological Survey of Canada, Memoir 294, 134 p.

Treude, E. 1977. Pond Inlet, northern Baffin Island: the structure of an Eskimo resource area. *Polar Geography* 1(2): 95-122.

Tuck, L.M. 1957. Wildlife investigations in the Cape Hay region, Lancaster Sound, 1957. Canadian Wildlife Service, Report No.760, 39 p.

Turnbull, T.L. 1974. Arctic III Expedition: biological report. Vol.4. James Allister MacInnis Foundation Arctic Diving Expeditions. Advisory Committee, Northern Development, North of 60. Dept. of Indian and Northern Affairs, Ottawa, 82 p.

Usher, P.J. 1975. Historical statistics approximating fur, fish, and game harvests within Inuit lands of the N.W.T. and the Yukon, 1915-1974. Vol.3. Inuit Tapirisat of Canada, Renewable Resources Project. Boreal Institute for Northern Studies, University of Alberta, Edmonton, 71 p.

Villiers, D. 1969. The Central Arctic: an area economic survey, 1968. AESR 68/1. Industrial Division, Northern Administration Branch, Dept. of Indian and Northern Affairs, Ottawa, 189 p.

OTHER REFERENCES

Although this report was prepared primarily from a literature review, the following individuals were contacted during the preparation of the report and are hereby thanked for their participation and contributions.

B. Fallis, Dept. of Fisheries and Oceans, Winnipeg

K.J. Finley, LGL Ltd., Toronto

K. Hay, Dept. of Fisheries and Oceans, St. John's

J.G. Hunter, Dept. of Fisheries and Oceans, Arctic Biological Station (ABS), Ste. Anne de Bellevue, Quebec

J.B. Kemper, Dept. of Indian and Northern Affairs, Ottawa

T.H. Manning (for information on the northern Foxe Basin area)

D.E. McAllister, National Museum of Natural Sciences, Ottawa (for unpublished data on fish collections from the eastern Arctic)

G.W. Rowley (for information on the northern Foxe Basin area)

R.E. Schweinsburg, N.W.T. Fish and Wildlife Service, Yellowknife

D.E. Sergeant, Dept. of Fisheries and Oceans, ABS, Ste. Anne de Bellevue, Quebec

H.B. Silverman, Marine Sciences Centre, McGill University, Montreal

G. Sleno, Dept. of Fisheries and Oceans, ABS, Ste. Anne de Bellevue, Quebec

P.A. Smith, Canadian Wildlife Service, Ottawa

T.G. Smith, Dept. of Fisheries and Oceans, ABS, Ste. Anne de Bellevue, Quebec

I. Stirling, Canadian Wildlife Service, Edmonton

APPENDIX

ADDITIONAL REPORTS RELATED TO THE NORTHERN LAND USE INFORMATION SERIES

Beaubier, P.H. and T. Pierce. Recreation-Tourism Evaluation, Land Use Information Series, Lands Directorate, Environment Canada, Ottawa. 1974.

Elson, M. Catalogue of Fish and Stream Resources of East Central Yukon Territory, Fisheries and Marine Service, Environment Canada. 1974.

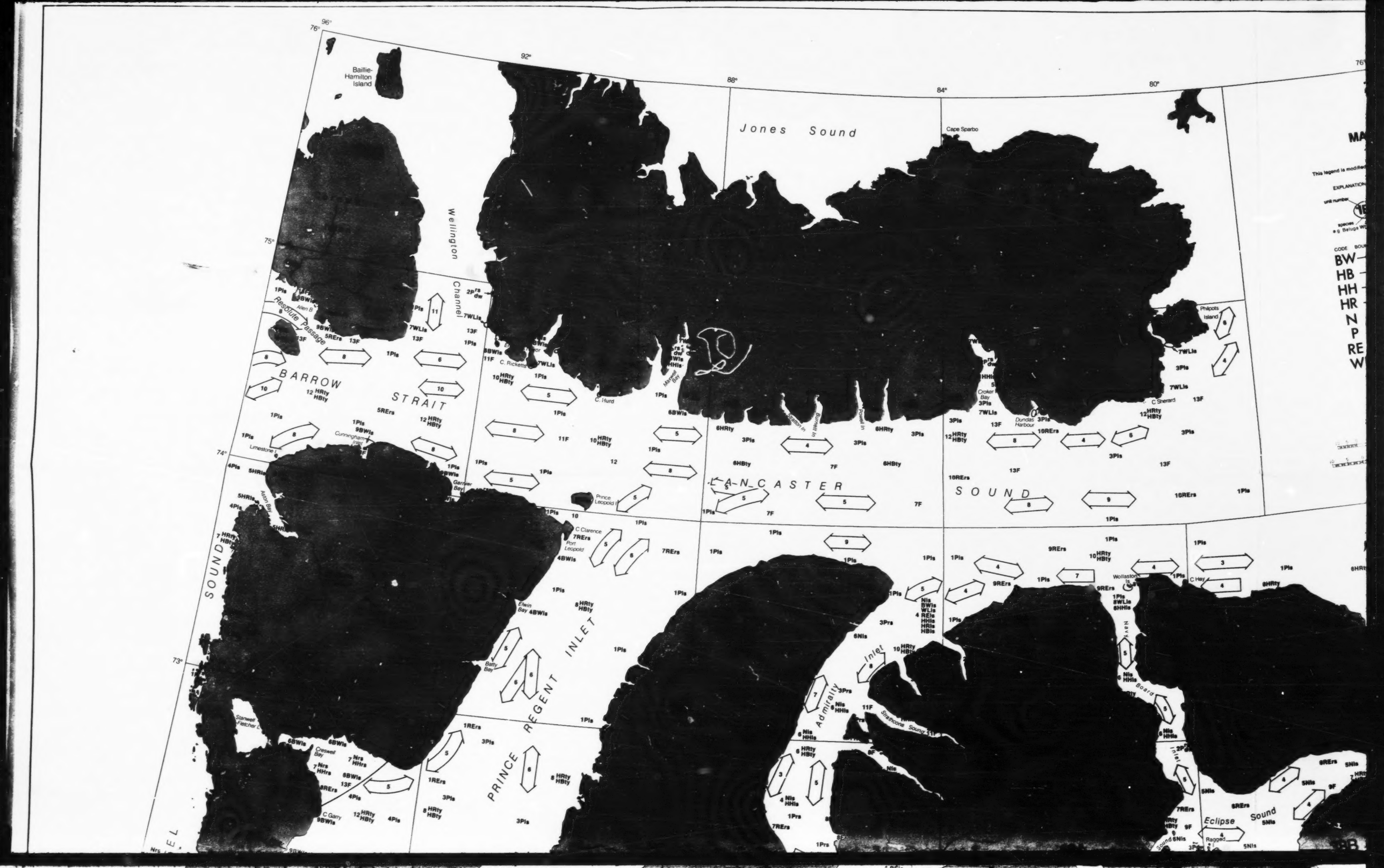
Jacobson, R. Wildlife and Wildlife Habitat in the Great Slave and Great Bear Lake Regions, 1974-1977, Environmental Studies No. 10, Northern Affairs Programs, Department of Indian and Northern Affairs, Ottawa. 1979.

MacDonald, G. and R. Fudge. Arctic Land Use Research Program 1978: A Survey of the Fisheries Resources of the Kazan Upland (Southeastern District of Mackenzie, Southern District of Keewatin, NWT), Environmental Studies No. 11, Northern Affairs Program, Department of Indian and Northern Affairs, Ottawa. 1979.

MacDonald, G. and D.B. Stewart. Arctic Land Use Research Program 1979. A Survey of the Aquatic Resources of the Central Keewatin Region of the Northwest Territories, Environmental Studies No. 17, Northern Affairs Program, Department of Indian and Northern Affairs, Ottawa. 1980.

Stewart, D.B. and G. MacDonald. Arctic Land Use Research Program 1977. A Survey of the Fisheries Resources of the Central Northwest Territories, Environmental Studies No. 8, Department of Indian and Northern Affairs and the Department of the Environment, Ottawa. 1978.

Sutherland, B.G. and W.R. Golke. A Summary of Fisheries Data Collected for the Land Use Information Map Series. During 1975 and 1976, Environmental Studies No. 5, Department of Indian and Northern Affairs and the Department of the Environment, Ottawa. 1978.


96°
92°
88°
84°
80°
76°
75°
74°
73°
Baillie-Hamilton Island
Jones Sound
Cape Sparbo
Wellington Channel
Resolute Passage
Allen B
C. Ricketts
C. Hurd
Marvel Bay
Phipotts Island
BARROW STRAIT
Limestone I
Cunningham Inlet
Croker Bay
Dundas Harbour
C Sherard
LANCASTER SOUND
Austin Bay
Garnier Bay
Prince Leopold I
C Clarence
Port Leopold
Erwin Bay
Batty Bay
PRINCE REGENT INLET
Stanwell Fletcher L
Creswell Bay
C Garry
Admiralty Inlet
Strathcona Sound
Wollaston Is
C Hay
Eclipse Sound
Ragged
Fowell In
Burnett In
Stratton In

72°
76°
MARINE MAMMALS
WILDLIFE LEGEND
This legend is modified after the Arctic Ecology Map Series
EXPLANATION OF SYMBOL
habitat function e.g. Concentration Area
unit number
1BW1s
species e.g. Beluga Whale
seasonal use e.g. summer
Note: Symbols not associated with boundaries indicate a general occurrence where approximate limits cannot be established. Migration routes indicate very general areas and directions. All sanctuaries are considered critical areas
CODE BOUNDARY SPECIES
BW Beluga whale
HB Bearded seal
HH Harp seal
HR Ringed seal
N Narwhal
P Polar bear
RE Rare or endangered species e.g. Bowhead whale
WL Walrus
HABITAT FUNCTION
b Breeding area
d Denning area
f Feeding Area
l Staging or concentration area
m Migratory route
n Calving or breeding area
r Range
t All habitat functions
SEASONAL UTILIZATION
s Spring or summer
w Fall or winter
y Year-round use
OTHER
Migration route
Kilometers
miles
Scale 1:1,000,000
BAFFIN
BAY
Cape Walker
Bathurst
Pond Inlet
Guys Bight
Eclipse Sound
Ragged
1Pls
6HRty
6REns
5Nls
9F
4
5
3

PRINCE REGENT INLET

PEEL

GULF OF BOOTHIA

Admiralty Inlet

Eclipse Sound

Bathy Bay

Creswell Bay

C Garry

Brentford Bay

Babbage Bay

Cape Kater

Fitzgerald Bay

Yeoman I

Iglorsuit I

Strathcona Sound

Ragged

Milne Inlet

Tay Sound

Pond Inlet

Berner Bay

Bellot Bay

Aberrethy Bay

Thom Bay

Murray Maxwell Bay

Steensby Inlet

Auadpe Bay

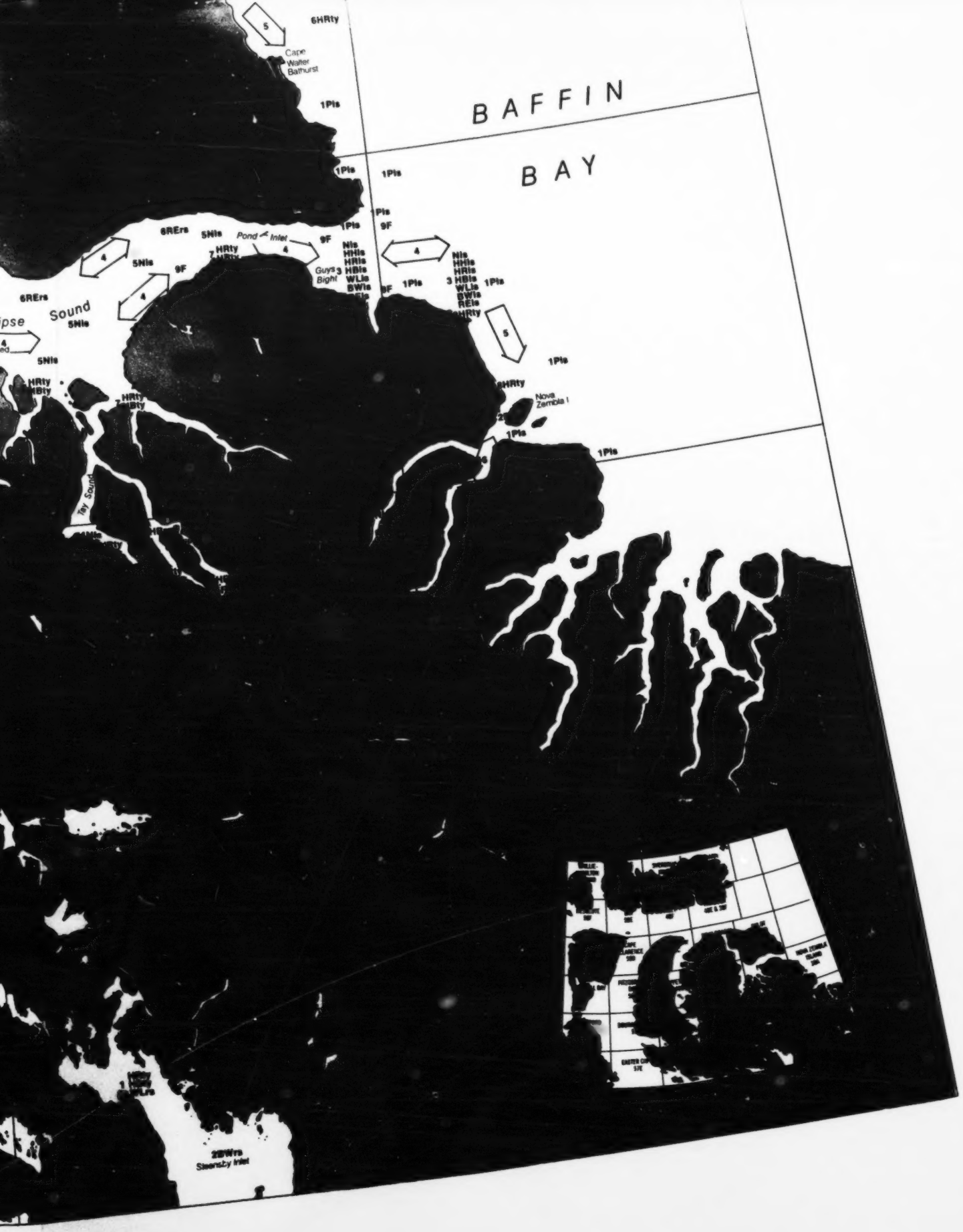
Enchant L

73°

72°

71°

70°


BAFFIN
BAY
Cape Walter Bathurst
Pond Inlet
Guys Bight
Sound
Nova Zembla I
Bay Sound
Steensby Inlet
6HRty
5
1Pls
6REFs
5Nls
9F
4
HRty
Nls
HNls
HRls
HBls
WLls
BWls
REls
3
2BWFs